

NASA CR-144945-4

Part 4 of 4

**A COMPILATION OF SPACECRAFT LOADS DATA  
FROM  
FOUR TITAN CENTAUR LAUNCH VEHICLE FLIGHTS  
VOLUME II**

**VIBRATION POWER SPECTRAL DENSITY ANALYSIS  
OF LAUNCH AND MAX Q FLIGHT**

Compiled by George Kachadourian

(NASA-CR-144945-Pt-4) A COMPILATION OF  
SPACECRAFT LOADS DATA FROM FOUR TITAN  
CENTAUR LAUNCH VEHICLE FLIGHTS. VOLUME 2. *HC A08/MF A01*  
PART 4: VIBRATION POWER SPECTRAL DENSITY  
ANALYSIS OF LAUNCH AND MAX Q FLIGHT (General G3/15 42479

N77-28185

Unclas

RECEIVED  
NASA STI FACILITY  
INPUT BRANCH

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for

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January 1977

VOLUME II  
VIBRATION PSD OF LAUNCH & MAX Q FLIGHT

## SECTION 4

TC-3/VIKING B SPACECRAFT

Launch Date September 9, 1975

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#### Contents Description - Section 4 - TC-3 Data

This section presents Power Spectral Density (PSD) plots of the eight parameters listed below. All analyses are of two second time samples. The data is displayed in the pairs of a two second time sample and its PSD analysis.

The analyses cover the Stage 0 Ignition/Lift Off and Max Q periods of time for the TC-3 launch. A matrix of time samples and analyses performed are shown here in Table 1. Instrument list and sensor location are presented in Table 2 and Figure 1 respectively.

#### Parameters for Which PSD Analyses were Performed

| Parameter                                    | Description                                                                                                                                                              |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CY1820<br>CY1830<br>CY1840<br>CY1850         | Vibration measurements on the Viking Orbiter Bus                                                                                                                         |
| $\ddot{X}_L$<br>$\ddot{Y}_L$<br>$\ddot{Z}_L$ | Acceleration of the Viking Lander Capsule (VLC)<br>c. g. obtained through transformation of Viking Lander<br>Capsule Adapter (VLCA) strain gages assuming a<br>rigid VLC |
| $\ddot{Z}_B$                                 | Average of CY1820, CY1840 and CY1850                                                                                                                                     |

Table 4.1 - Data Analysis Matrix: TC-3 PSD Analyses

| Event Time<br>Sample Rate          | IRIG No.<br>Sensor No. | #18<br>CY1820  | #17<br>CY1830  | #16<br>CY1840  | #15<br>CY1850  | $\ddot{X}_L$ | $\ddot{Y}_L$ | $\ddot{Z}_L$ | $\ddot{Z}_B$ |
|------------------------------------|------------------------|----------------|----------------|----------------|----------------|--------------|--------------|--------------|--------------|
| Pre Launch<br>67132-67134          |                        | 1024<br>& 4096 | 1024<br>& 4096 | 1024<br>& 4096 | 1024<br>& 4096 | 1024         | 1024         | 1024         | 1024         |
| Stg. 0 Ign. - 1<br>67140.2-67142.2 |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Stg. 0 Ign. - 2<br>67142.2-67144.2 |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Stg. 0 Ign. - 3<br>67144.2-67146.2 |                        | -              | -              | -              | -              | 1024         | 1024         | 1024         | 1024         |
| Max Q - 1<br>67175-67177           |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Max Q - 1.5<br>67177-67179         |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Max Q - 2<br>67179-67181           |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Max Q - 2.5<br>67181-67183         |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Max Q - 3<br>67183-67185           |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |
| Max Q - 3.5<br>67185-67187         |                        | 4096           | 4096           | 4096           | 4096           | 1024         | 1024         | 1024         | 1024         |

Note: The numbers 4096 and 1024 indicate the digitization rate in samples per second used in processing the data.

TABLE 4.2 FM/FM TELEMETRY INSTRUMENTATION, 2208.5 MHz LINK, TC-3, VIKING B

| MEAS. NO. | DESCRIPTION            | JPL DESIGNATION | RANGE  |       | UNIT | A G U R A C Y | FM/FM CHANNEL | FILTER CUT OFF FREQUENCY - Hz |            |
|-----------|------------------------|-----------------|--------|-------|------|---------------|---------------|-------------------------------|------------|
|           |                        |                 | LOW    | HIGH  |      |               |               | A 1024 SPS                    | B 4096 SPS |
| CA886Y    | Fwd. Equip. Comp. Amb. | -               | 120    | 150   | db   | 5%            | 19            | —                             | 2800       |
| CY1820    | Longit. Vib; Foot H    | 2001AC1         | -30    | 30    | G    | 5%            | 18            | 133                           | 2100       |
| CY1830    | Radial Vib.; Bay 7/8   | 2001AC2         | -12    | +12   | G    | 5%            | 17            | 134                           | 1580       |
| CY1840    | Longit. Vib., Foot C   | 2001AC3         | - 5    | + 5   | G    | 5%            | 16            | 135                           | 1200       |
| CY1850    | Longit. Vib., Foot R   | 2001AC4         | - 5    | + 5   | G    | 5%            | 15            | 137                           | 900        |
| CY186S    | VLCA #750 Strain 1     | 2001SG1         | 10000C | 8000T | Lbs  | 5%            | 14            | 140                           | —          |
| CY187S    | VLCA #751 Strain 2     | 2001SG2         | 10000C | 8000T | Lbs  | 5%            | 13            | 145                           | —          |
| CY188S    | VLCA #752 Strain 3     | 2001SG3         | 10000C | 8000T | Lbs  | 5%            | 12            | 153                           | —          |
| CY189S    | VLCA #753 Strain 4     | 2001SG4         | 10000C | 8000T | Lbs  | 5%            | 11            | 160                           | —          |
| CY190S    | VLCA #754 Strain 5     | 2001SG5         | 10000C | 8000T | Lbs. | 5%            | 10            | 180                           | —          |
| CY191S    | VLCA #755 Strain 6     | 2001SG6         | 10000C | 8000T | Lbs. | 5%            | 9             | 200                           | —          |
| CY192P    | VLC Blossfield DP      |                 | -0.25  | 0.75  | PSID | 5%            | 4             | —                             | —          |
| CY193P    | VLC Blossfield Press.  |                 | 0      | 16    | PSIA | 5%            | 3             | —                             | —          |

① Range shown is max limit. Each gage will have a different range dependent on its calibration value.

A. This is a special set of filters which, in conjunction with discriminator characteristics, results in phase errors of less than 10 between VCO 9 through 18 below 40 Hz

B. These are twice the standard IRIG filter.

TABLE 4.3 - TIME OF FLIGHT EVENTS:

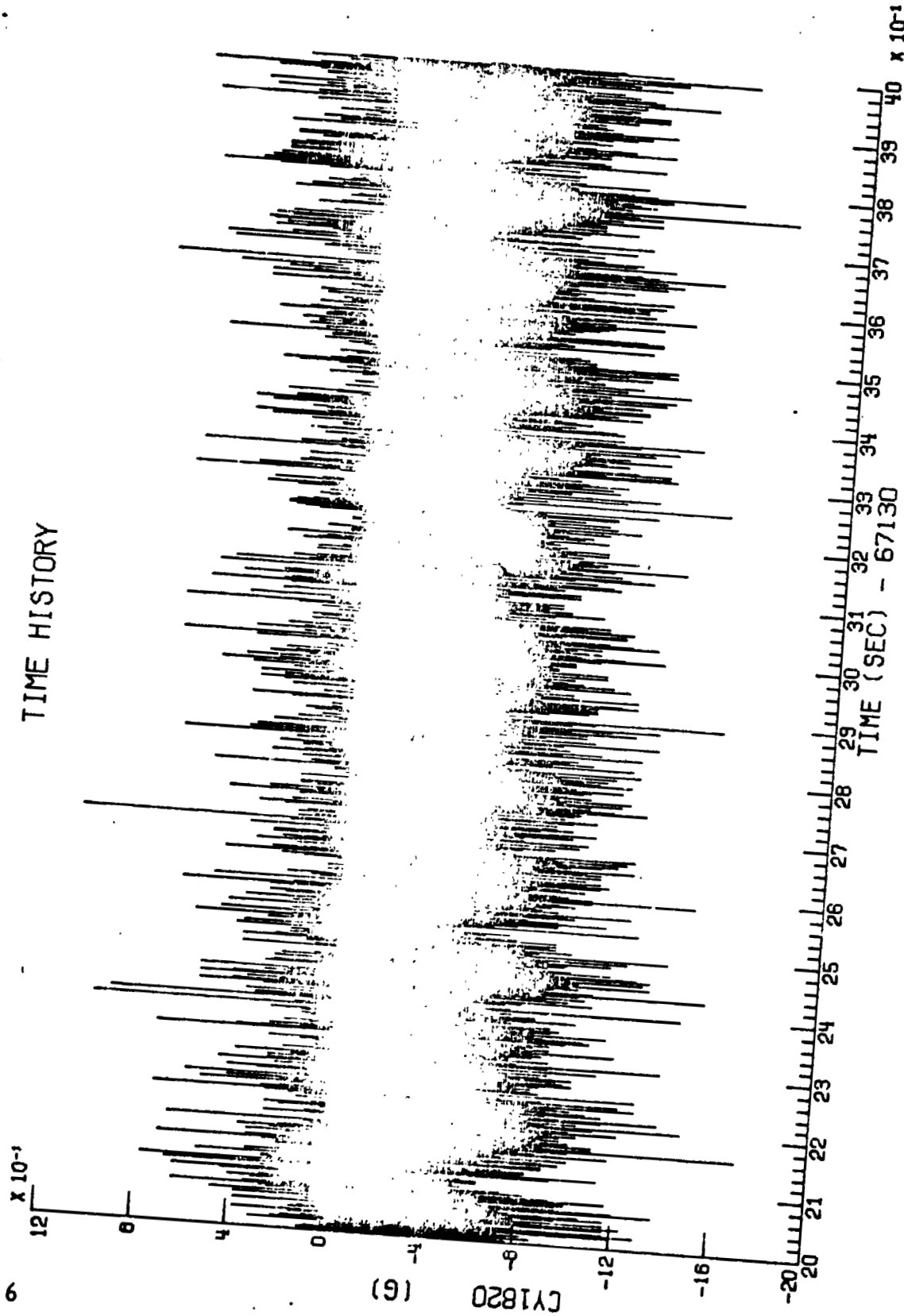
TC-3/VIKING B SPACECRAFT

(9/9/75 Launch)

| FLIGHT<br>EVENT   | Predicted<br>Sec from LO | Actual<br>Hrs Min Sec | Actual<br>Seconds | From LO<br>Seconds | From Stg I Ign.<br>Seconds |
|-------------------|--------------------------|-----------------------|-------------------|--------------------|----------------------------|
| 1 STG O IGN. / LO | 0                        | 18:39:00              | 67140             | 0                  |                            |
| 2 MACH I / MAX Q  | 50                       | 18:39:42 ± 5          | 67182 ± 5         | 42 ± 5             |                            |
| 3 FBR RELEASE     | 100                      | 18:40:40              | 67240             | 100                |                            |
| 4 STG O BO        |                          | 18:40:44.5            | 67214.5           | 104.5              |                            |
| 5 STG I IGN       | 110                      | 18:40:51.6            | 67251.6           | 111.6              | 0                          |
| 6 JETT SRM        | 122                      | 18:41:02.95           | 67262.95          | 122.95             | 11.35                      |
| 7 STG I BO        | 259                      | 18:43:20.85           | 67400.85          | 260.85             | 149.25                     |
| 8 STG II IGN      | 259.7                    | 18:43:21.6            | 67401.6           | 261.6              |                            |
| 9 JETT SHROUD     | 270                      | 18:43:31.6            | 67411.6           | 271.6              |                            |
| 10 G II BO        | 468                      | 18:46:48.3            | 67608.3           | 468.3              |                            |
| 11 JETT STG II    | 474                      | 18:46:53:25           | 67613.25          | 473.25             |                            |
| 12 MES-1          | 485                      | 18:47:04.8            | 67624.8           | 484.8              |                            |
| 13 MECO-1         | 613                      | 18:49:13.1            | 67753.1           | 613.1              |                            |
| 14 MES-2          | 1699                     | 19:07:26.8            | 68846.8           | 1706.8             |                            |
| 15 MECO-2         | 2005                     | 19:12:27.7            | 69147.7           | 2002.7             |                            |
| 16 S/C SEP.       | 2225                     | 19:16:07.7            | 69367.7           | 2227.7             |                            |



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MAX = 1.100

MIN = -1.700

VIKING B FLT (CIF)

PRE-IGNITION

4096 SPS

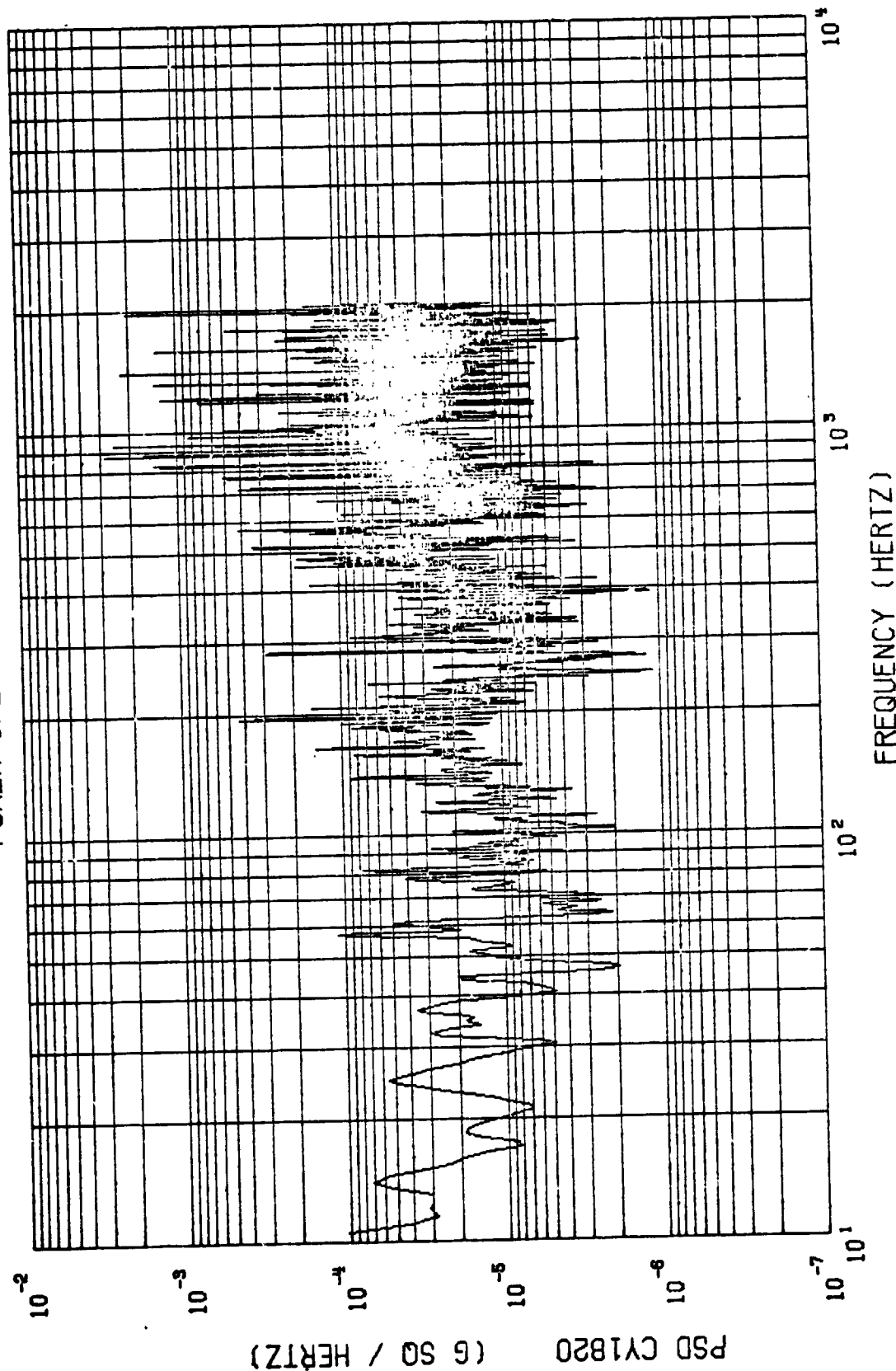
CY1820

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.2a



# POWER SPECTRAL DENSITY



$\Delta F = .499$

START = 57192.000 SEC

STOP = 67194.000 SEC

MEAN =  $-32623 \times 10^{-5}$

$\sigma = 11279 \times 10^{-5}$

$\sigma = 33584 \times 10^{-5}$

$3\sigma = 10075 \times 10^{-4}$

VIKING B FLT (CIF)

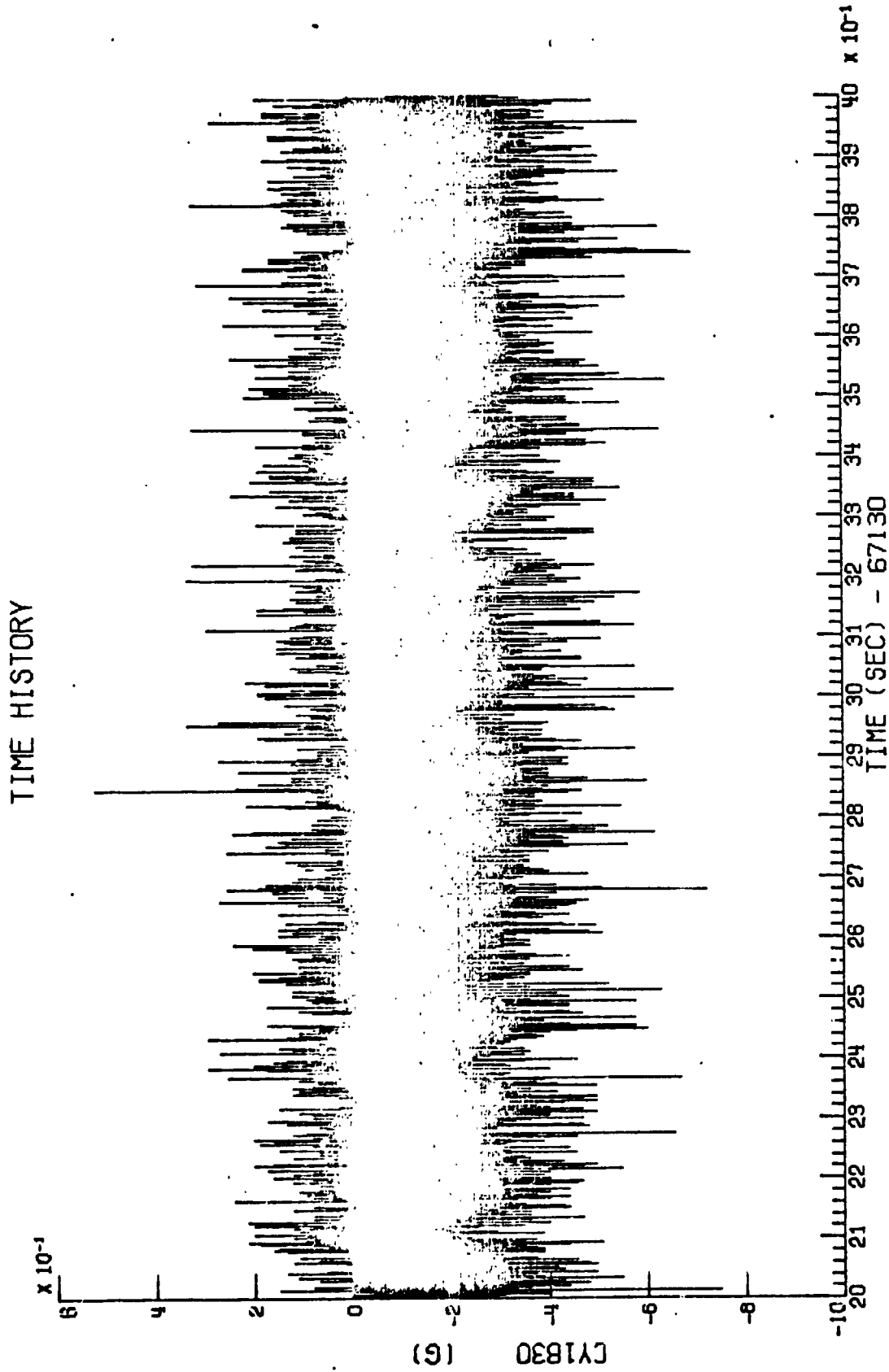
PRE-IGNITION

CY1820

4096 SPS

Figure 4.2b

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MAX = .520

MIN = -.747

VIKING B FLT (CIF)

PRE-IGNITION

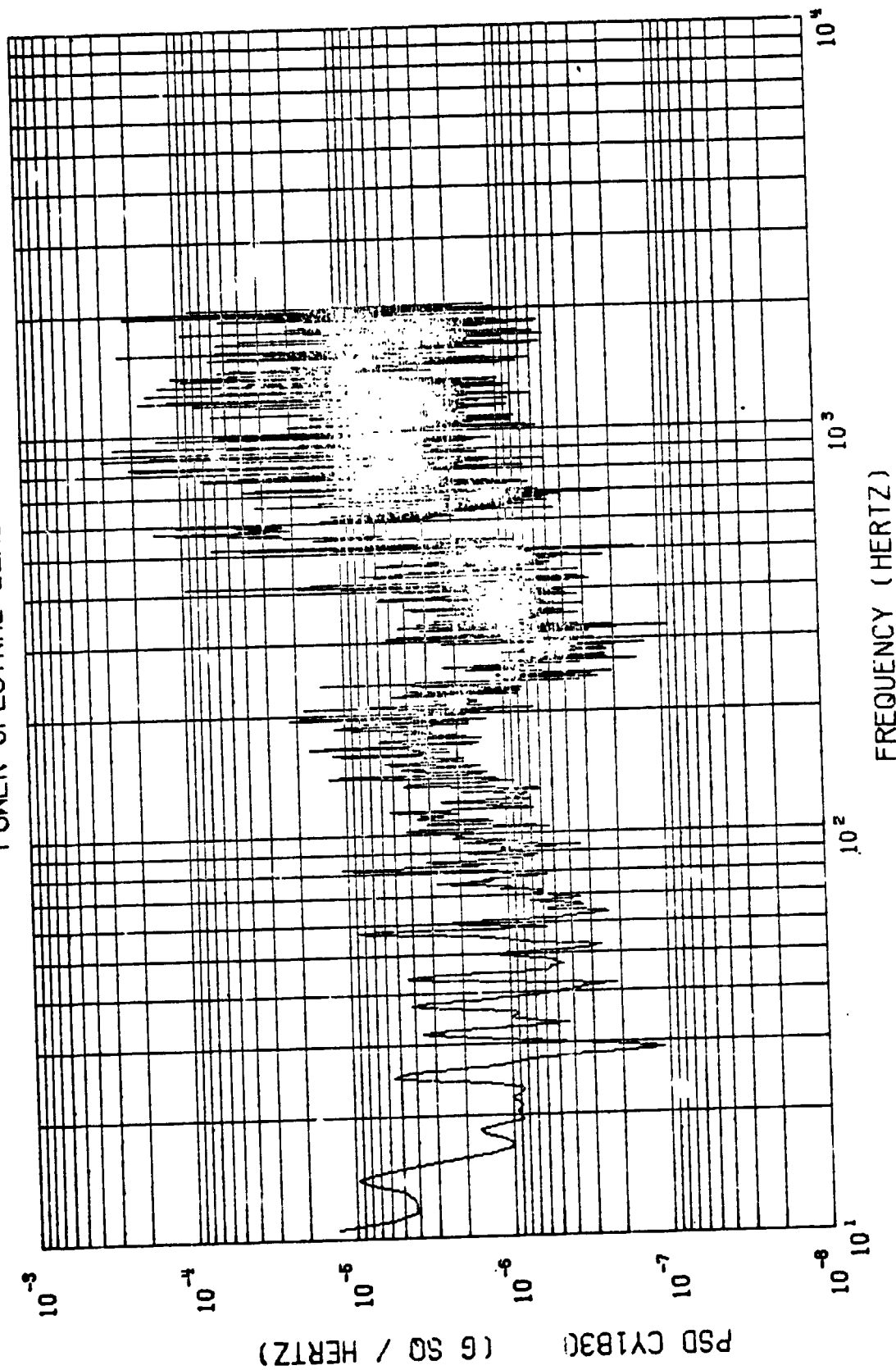
CY1830

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.3a

# POWER SPECTRAL DENSITY



$\Delta F = .499$

START = 67132.000 SEC

STOP = 67134.000 SEC

MEAN =  $-13269 \times 10^{-5}$

$\sigma^2 = 18559 \times 10^{-6}$

$\sigma = 13623 \times 10^{-5}$

$3\sigma = 40669 \times 10^{-5}$

VIKING B FLT (CIF)

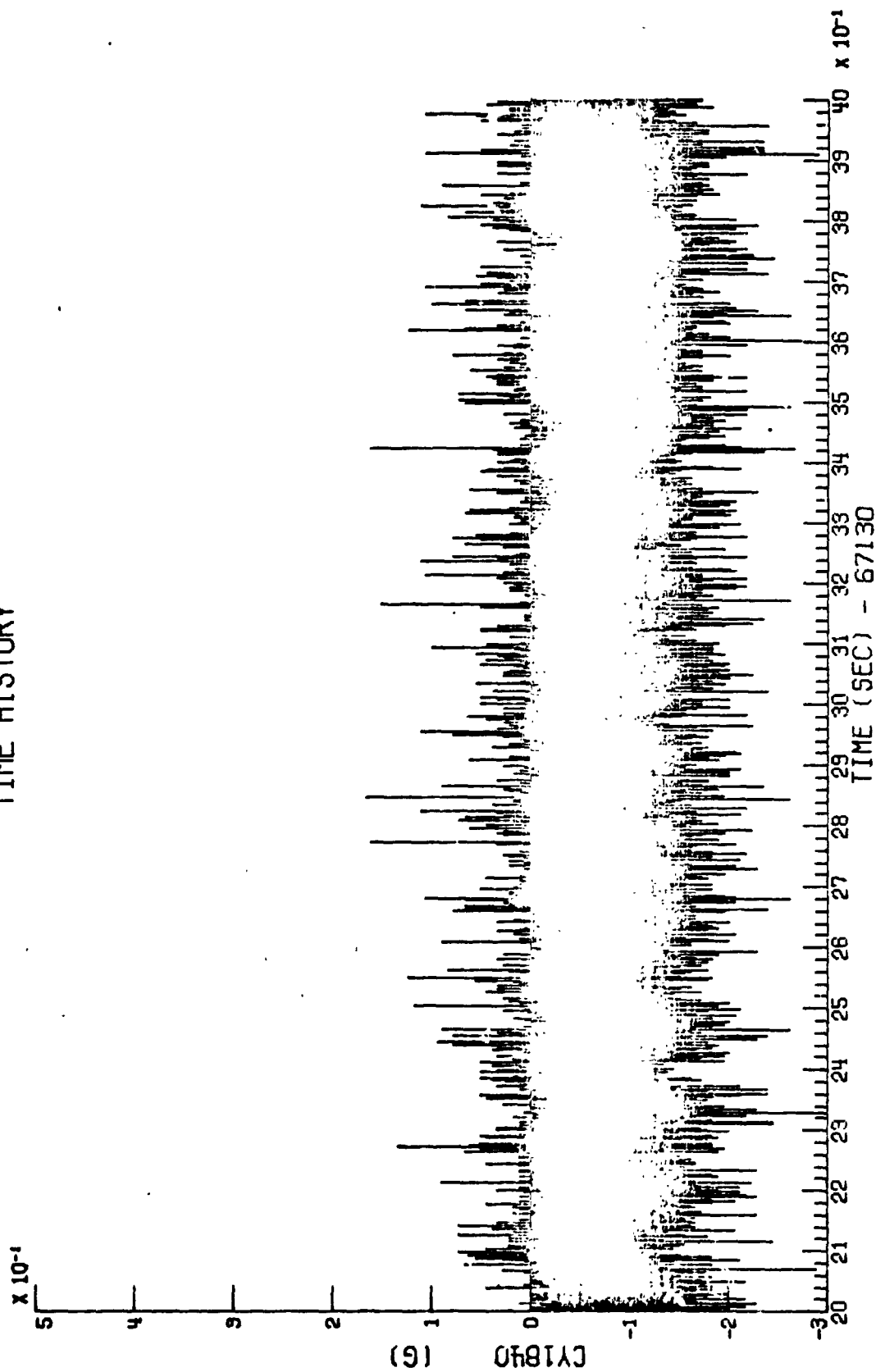
PRE-IGNITION

CY1830

4096 SPS

Figure 4.3b

# TIME HISTORY



MAX = .166

MIN = -.300

VIKING B FLT (CIF)

PRE-IGNITION

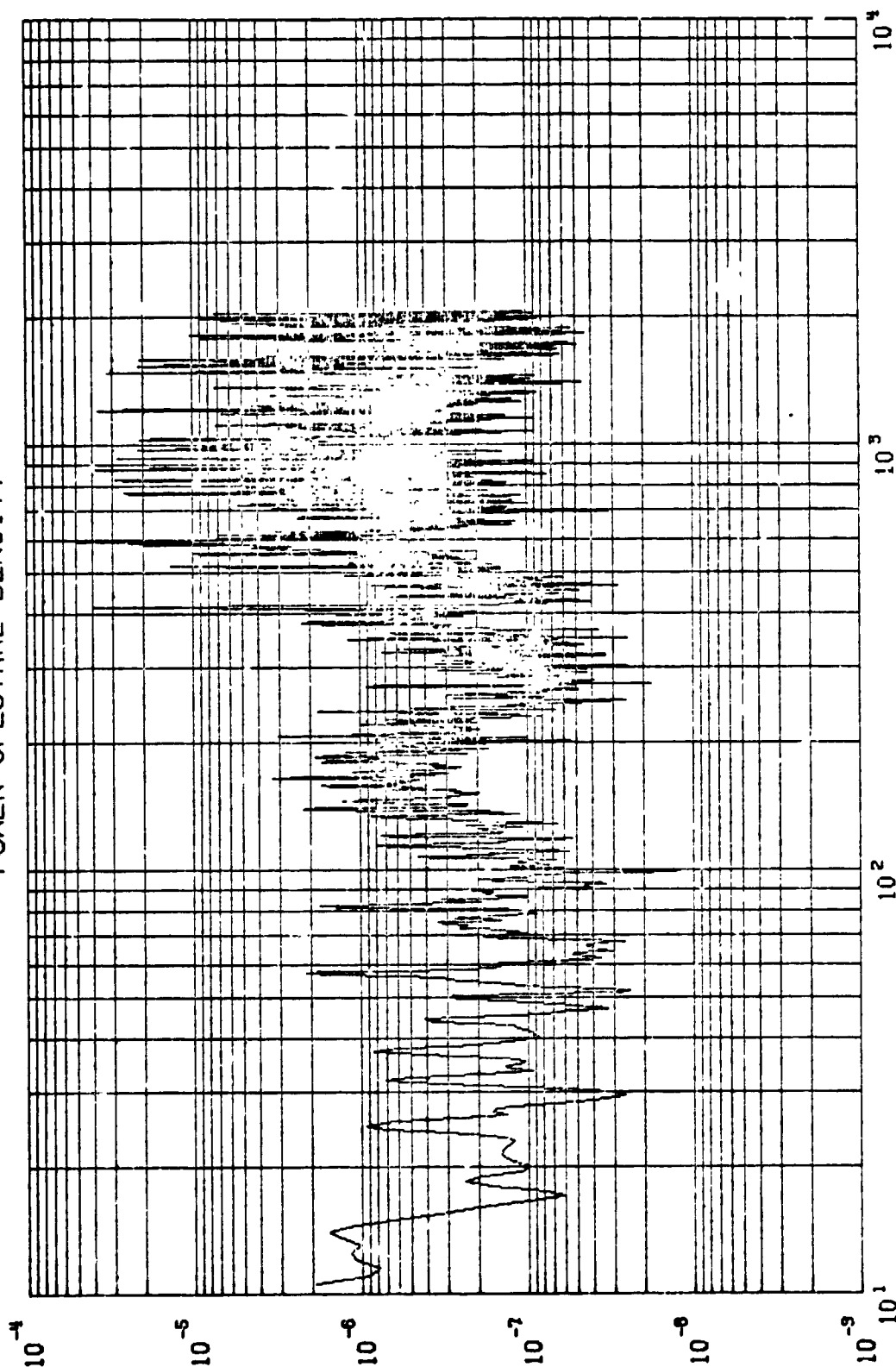
CY1840

4096 SQ S

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.4a

# POWER SPECTRAL DENSITY



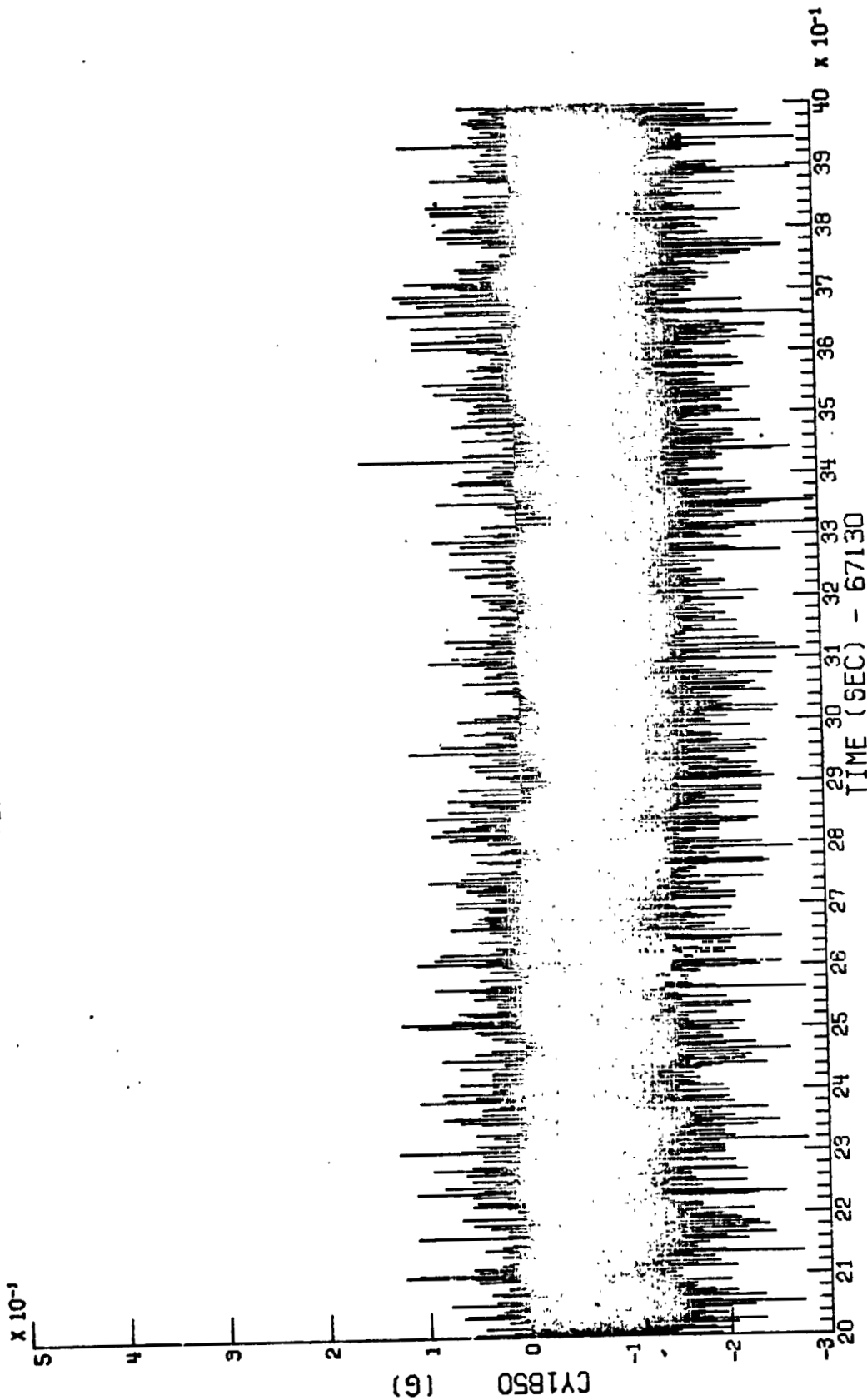
FREQUENCY (HERTZ)

$\Delta F = .499$       START = 67132.000 SEC      STOP = 67134.000 SEC  
 MEAN =  $-71181 \times 10^{-6}$        $\sigma^2 = 31859 \times 10^{-7}$        $\sigma = 56414 \times 10^{-6}$        $3\sigma = 16933 \times 10^{-6}$

VIKING B FLT (CIF)  
 PRE-IGNITION  
 CY1840  
 4090 SPS

Figure 4.4b

# TIME HISTORY



MIN = -.234

MAX = .155

CY1850

PRE-IGNITION

4096 sps

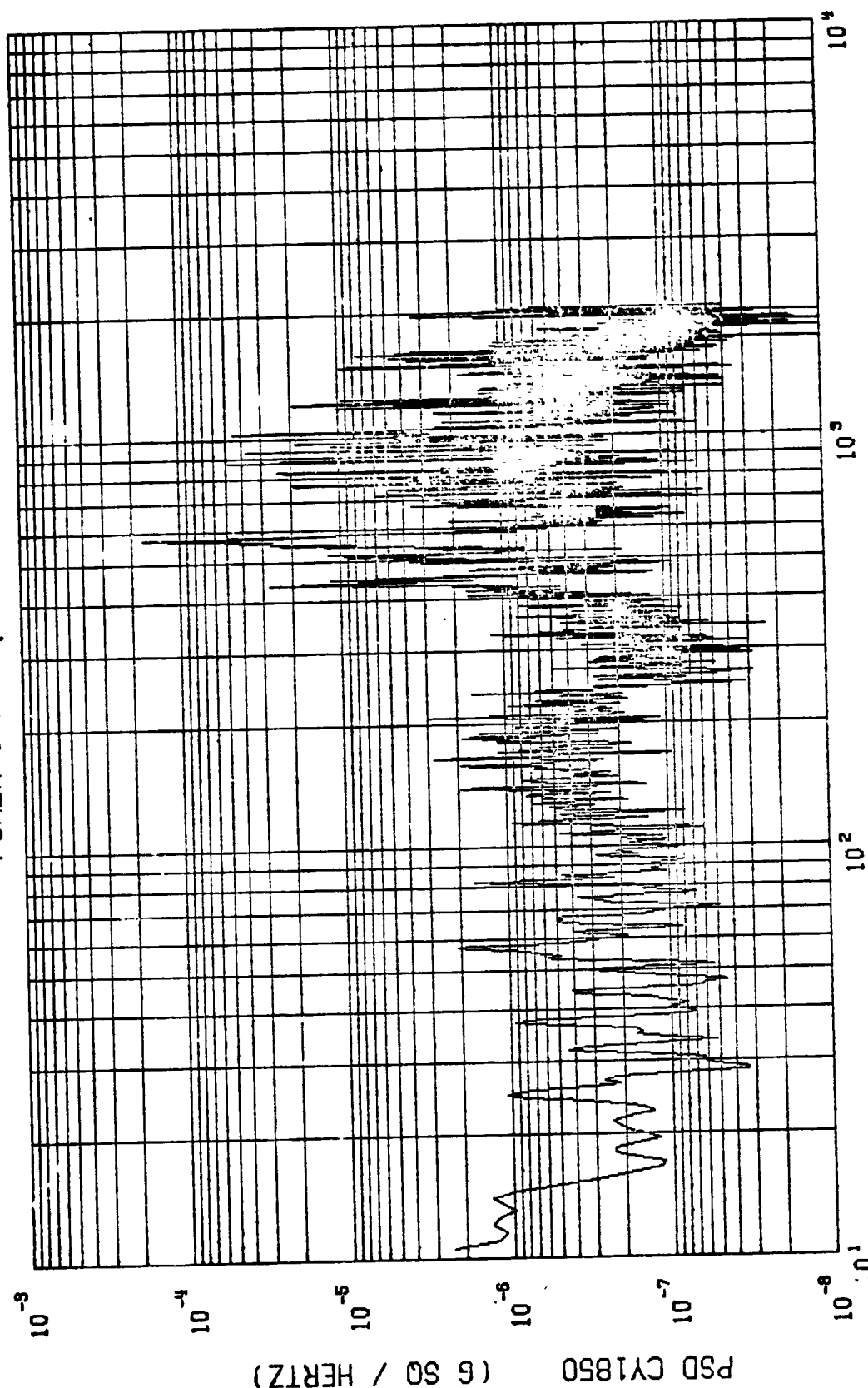
Figure 4.5a

VIKING B FLT (CIF)

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# POWER SPECTRAL DENSITY



$\Delta F = .493$

MEAN =  $-72988 \times 10^{-6}$

$\sigma^2 = 41108 \times 10^{-7}$

$\sigma = 64115 \times 10^{-4}$

$3\sigma = 19234 \times 10^{-5}$

START = 67132.000 SEC

STOP = 67134.000 SEC

VIKING B FLT (CIF)

PRE-IGNITION

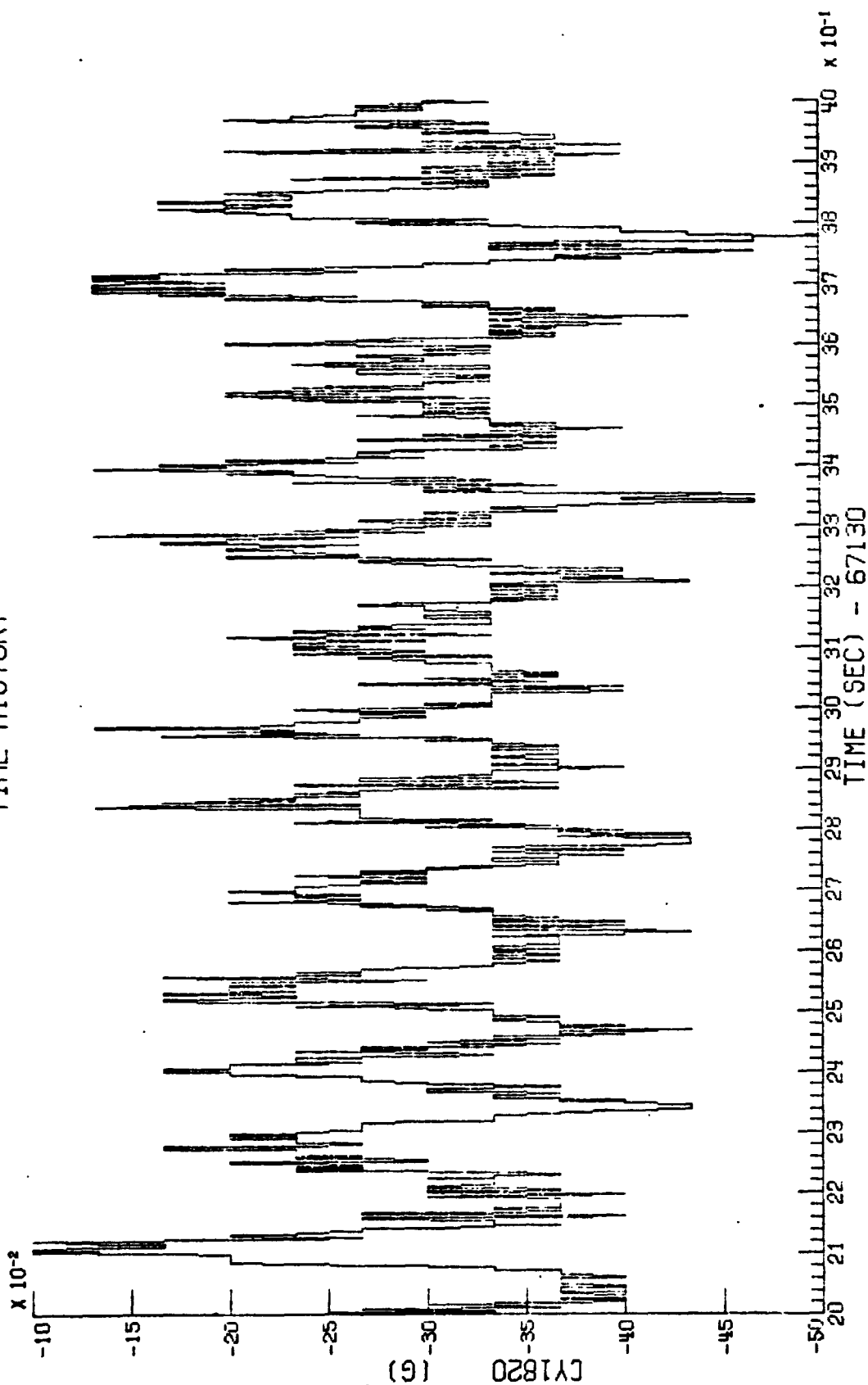
CY1850

4096 SPS

Figure 4.5b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY



MAX = -.100

MIN = -.500

VIKING B FLT (CIF)

PRE-IGNITION

CY1820

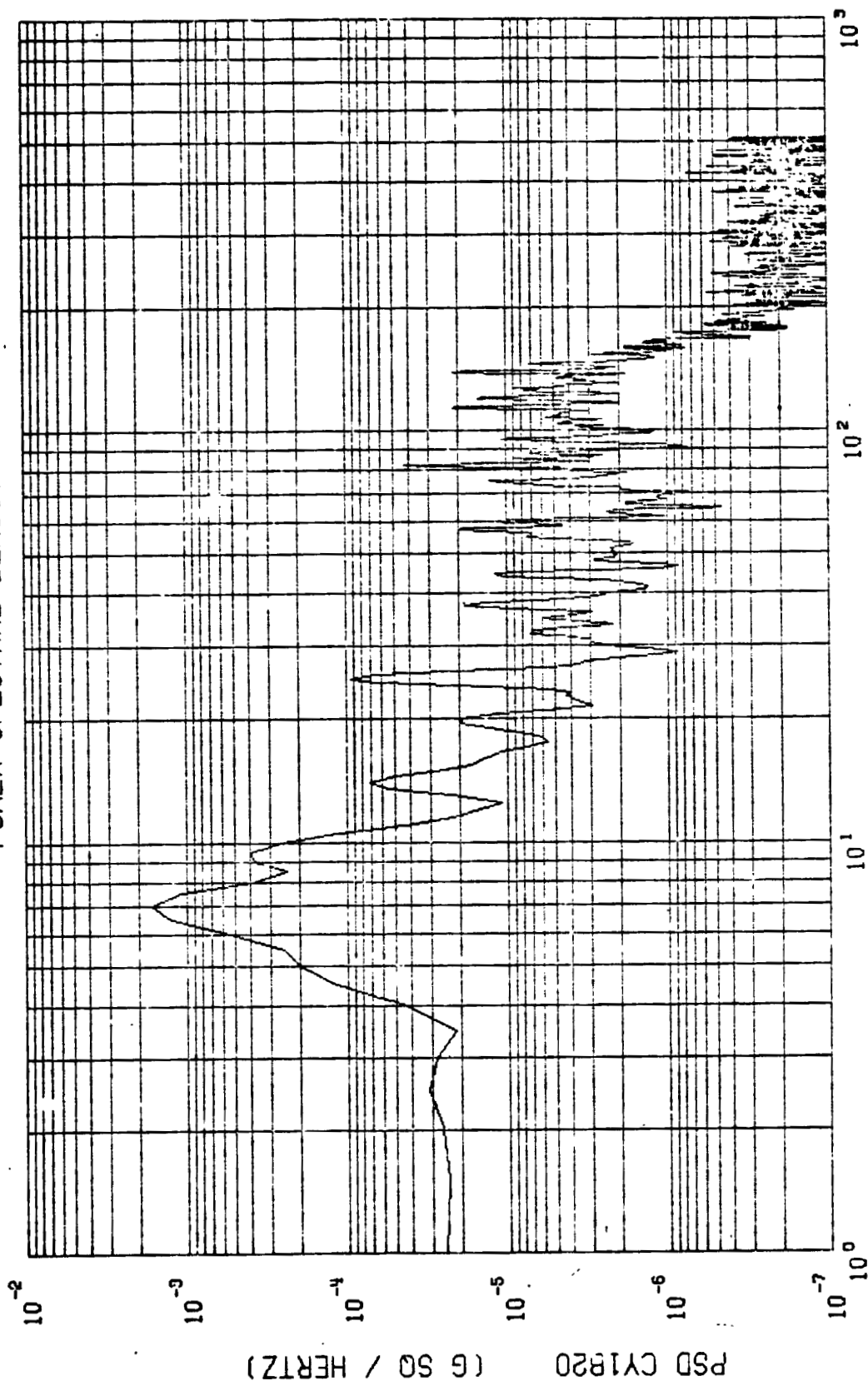
1024 SPS

NASA-LANGLEY SCIENTIFIC ANALYSIS PROGRAM 09/22/75

Figure 4.6a



# POWER SPECTRAL DENSITY



$\Delta F = .500$       START = 67132.000 SEC      STOP = 67134.000 SEC  
 MEAN =  $-30273 \times 10^{-5}$        $\sigma^2 = 46414 \times 10^{-7}$        $\sigma = 68128 \times 10^{-4}$        $3\sigma = 20438 \times 10^{-5}$

CY1820

PRE-IGNITION

1024 SPS

Figure 4.6b

VIKING B FLT (CIF)

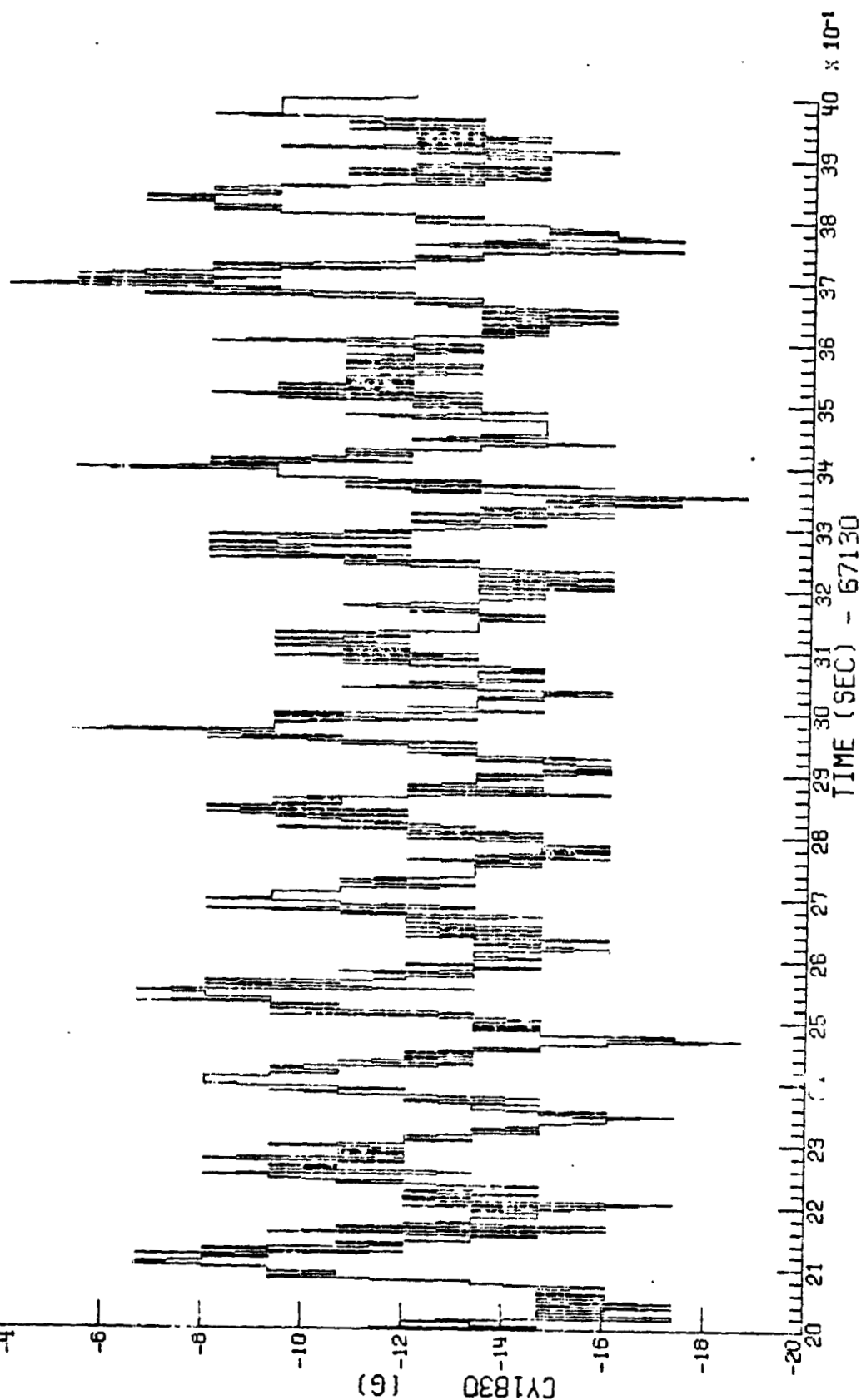
15

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY

$\times 10^{-2}$

16



MAX = -.040

MIN = -.187

VIKING B FLT (CIF)

PRE-IGNITION

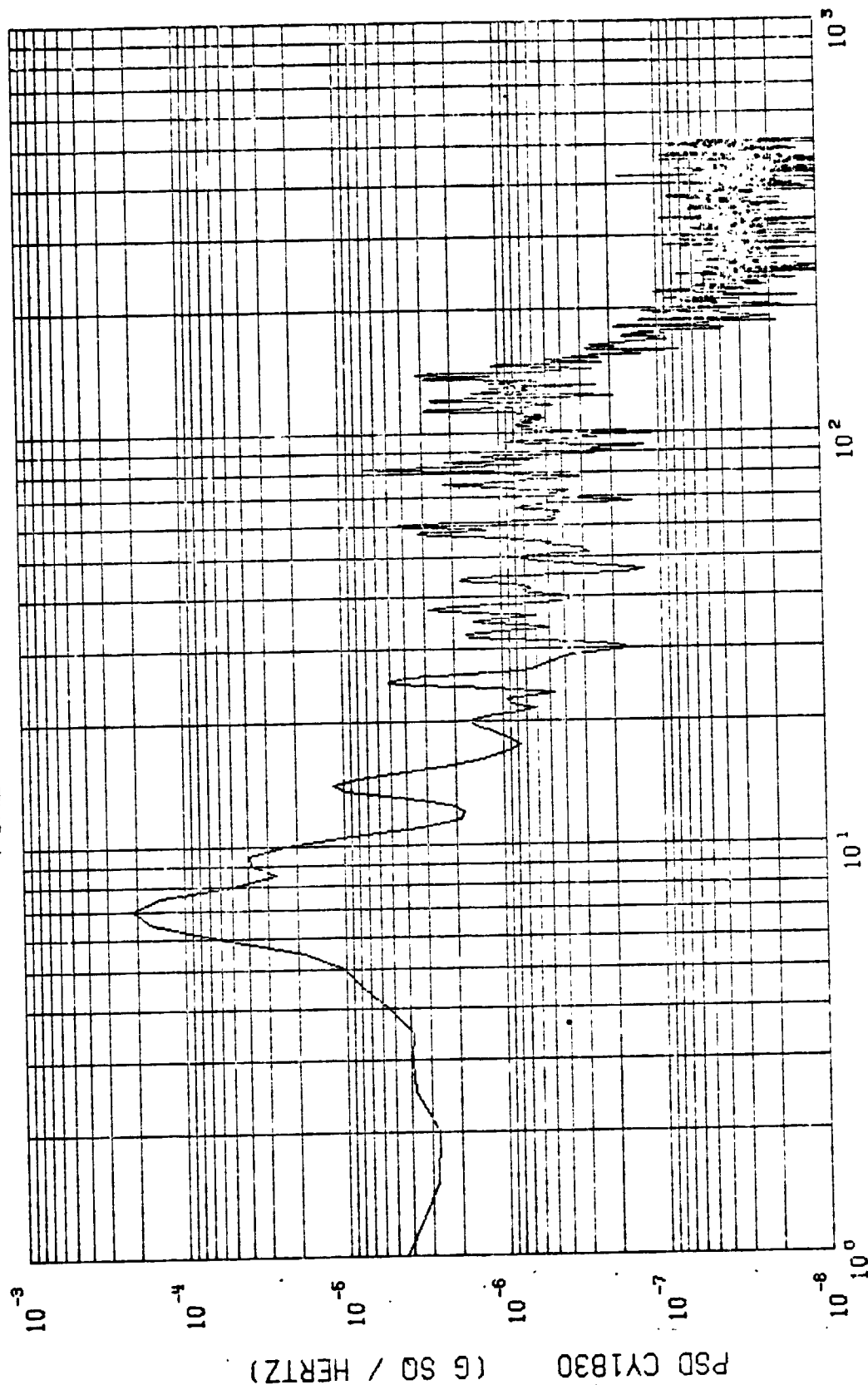
CY1830

NOISE-LEVELLY STATION 1400 YSLR PROGRAM 09/22/75

1024 SPS

Figure 4.7a

# POWER SPECTRAL DENSITY



$\Delta F = .500$   
 $MEAN = -12318 \times 10^{-5}$   
 $\sigma^2 = 58948 \times 10^{-8}$   
 $\sigma = 24279 \times 10^{-6}$   
 $3\sigma = 72838 \times 10^{-6}$

START = 67132.000 SEC

STOP = 67134.000 SEC

VIKING B FLT (CIF)

PRE-IGNITION

CY1830

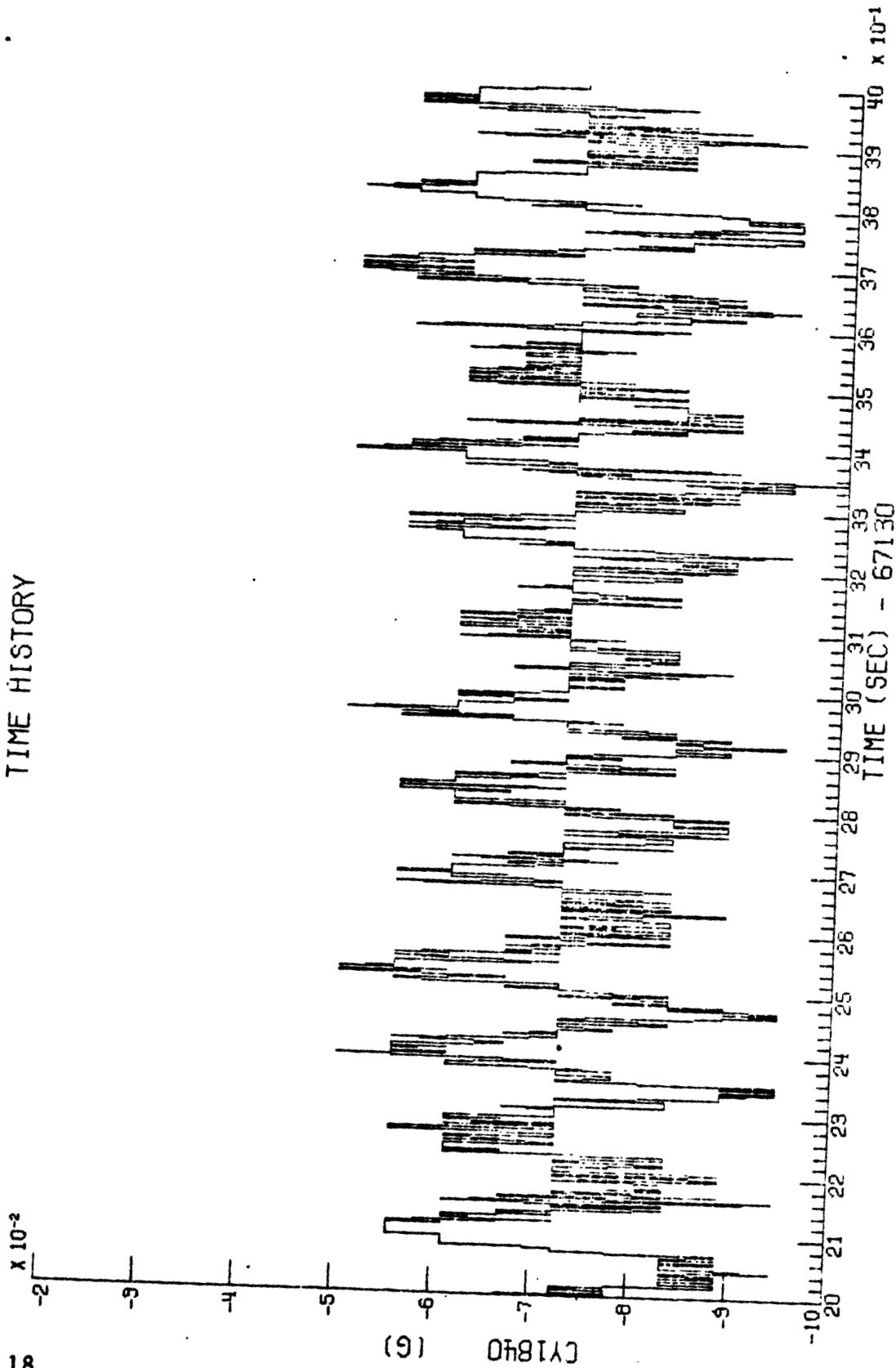
Figure 4.7b

1024 SPS

NOSEP-LANGLEY SOURCE ONY YS14 PROGRAM 09/22/75

# TIME HISTORY

18



MAX = -.050

MIN = -.100

VIKING B FLT (CIF)

PRE-IGNITION

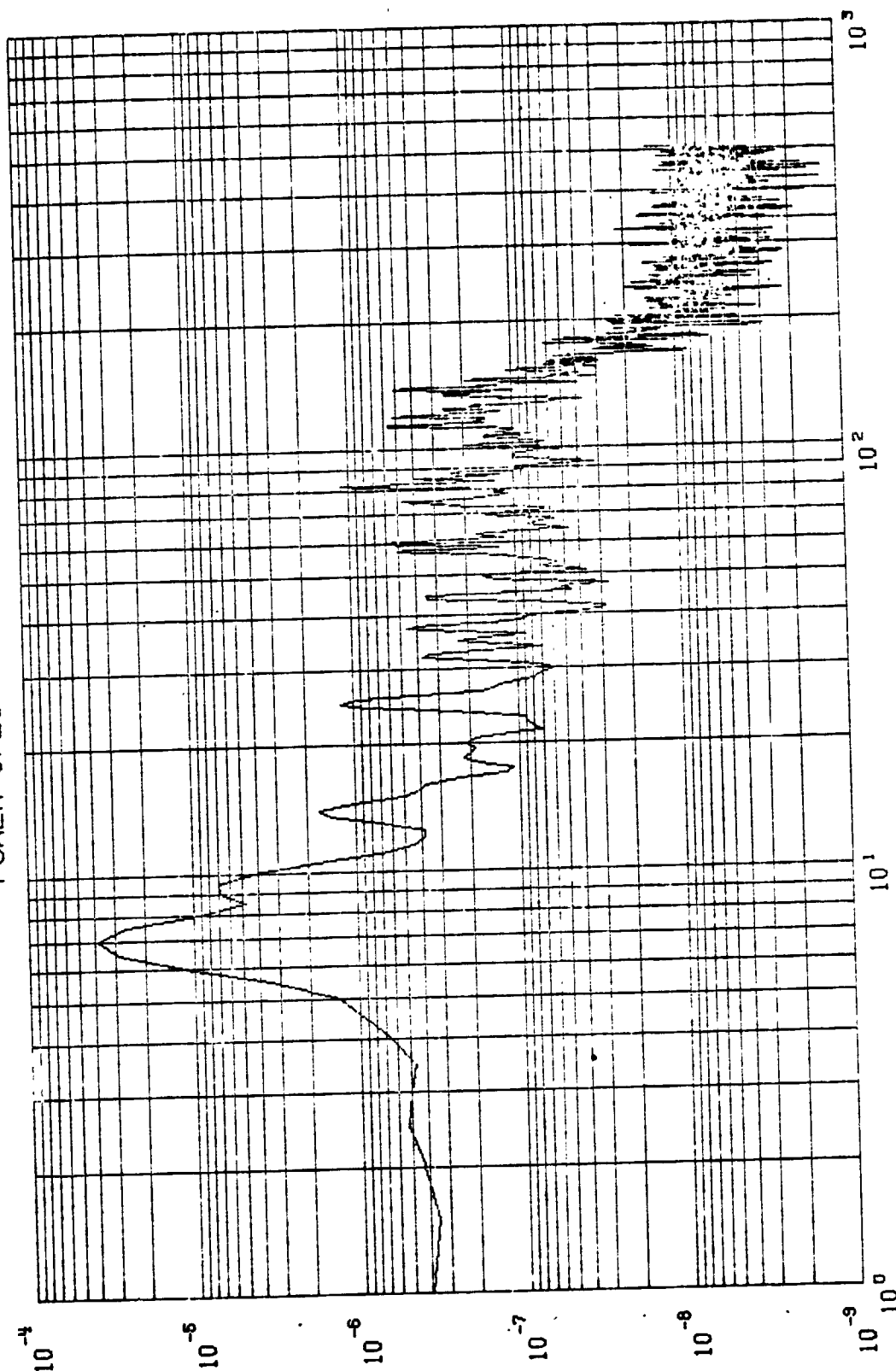
CY1840

1024 SPS

Figure 4.8a

09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$

START = 67132.000 SEC

STOP = 67134.000 SEC

MEAN =  $-72948 \times 10^{-6}$

$\sigma^2 = 1051 \times 10^{-7}$

$\sigma = 10251 \times 10^{-6}$

$3\sigma = 30755 \times 10^{-6}$

VIKING B FL. (CIF)

PRE-IGNITION

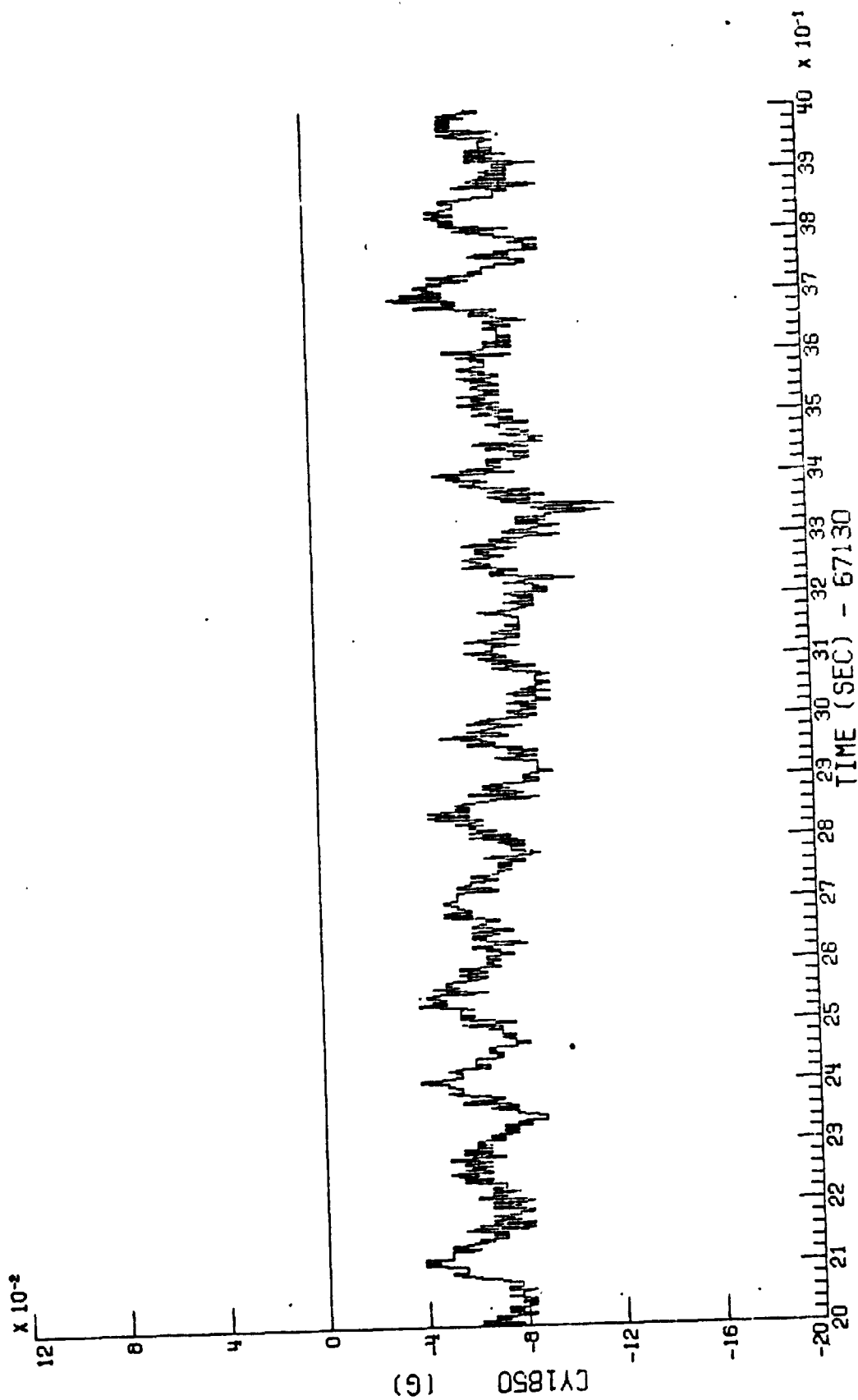
CY1840

1024 SPS

Figure 4.8b

NOISE LEVEL BY SIGNAL ANALYSIS PROGRAM US/22/75

# TIME HISTORY



MIN = -.122

MAX = -.033

CY1850

PRE-IGNITION

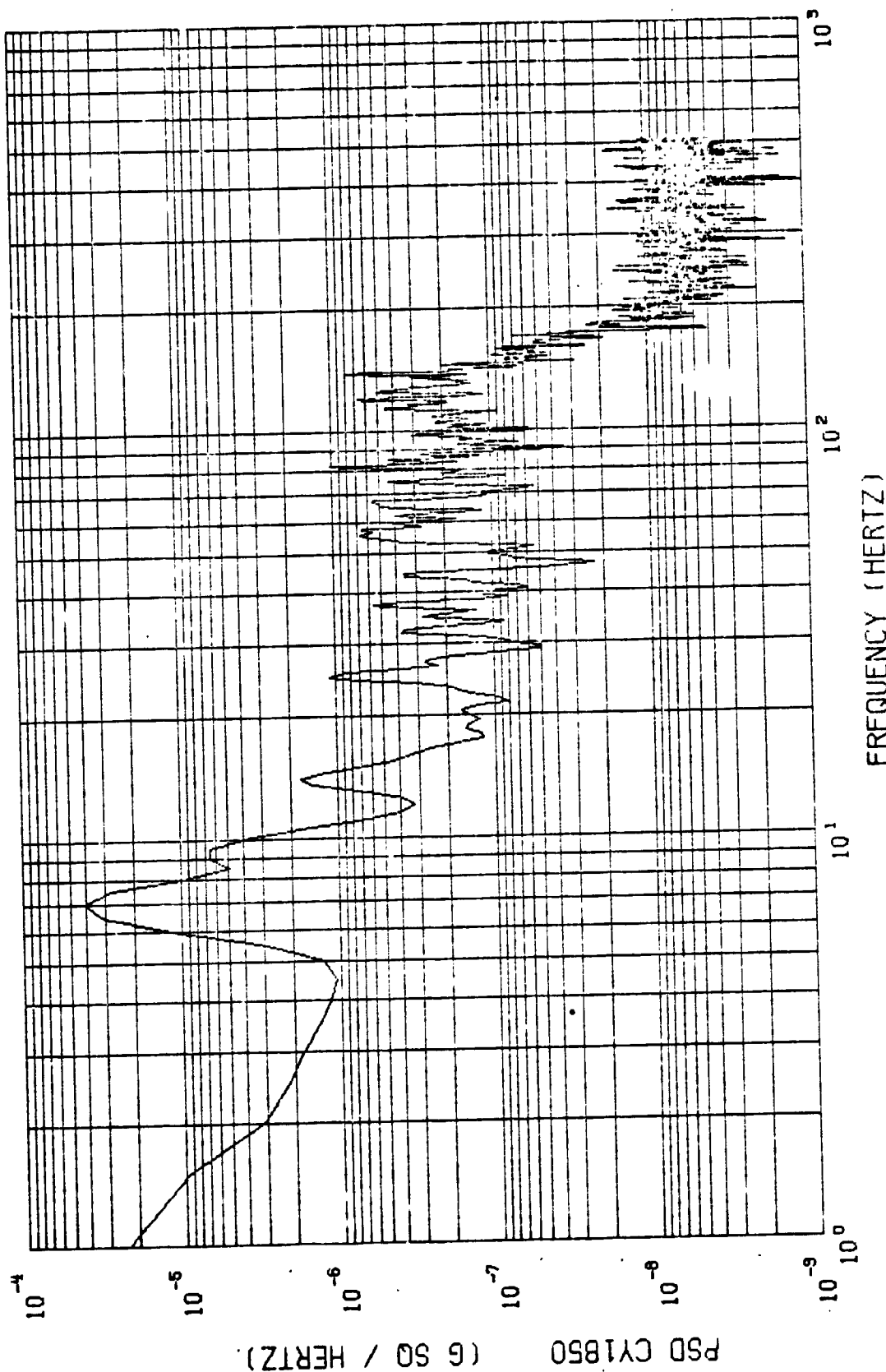
VIKING B FLT (CIF)

1024 SPS

Figure 4.9a

NASA-LANGLEY STORGE ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .500$   
 $MEAN = -71377 \times 10^{-6}$      $\sigma^2 = 16921 \times 10^{-6}$      $\sigma = 12618 \times 10^{-6}$      $3\sigma = 37854 \times 10^{-6}$

START = 67132.000 SEC

STOP = 67134.000 SEC

VIKING B FLT (CIF)

PRE-IGNITION

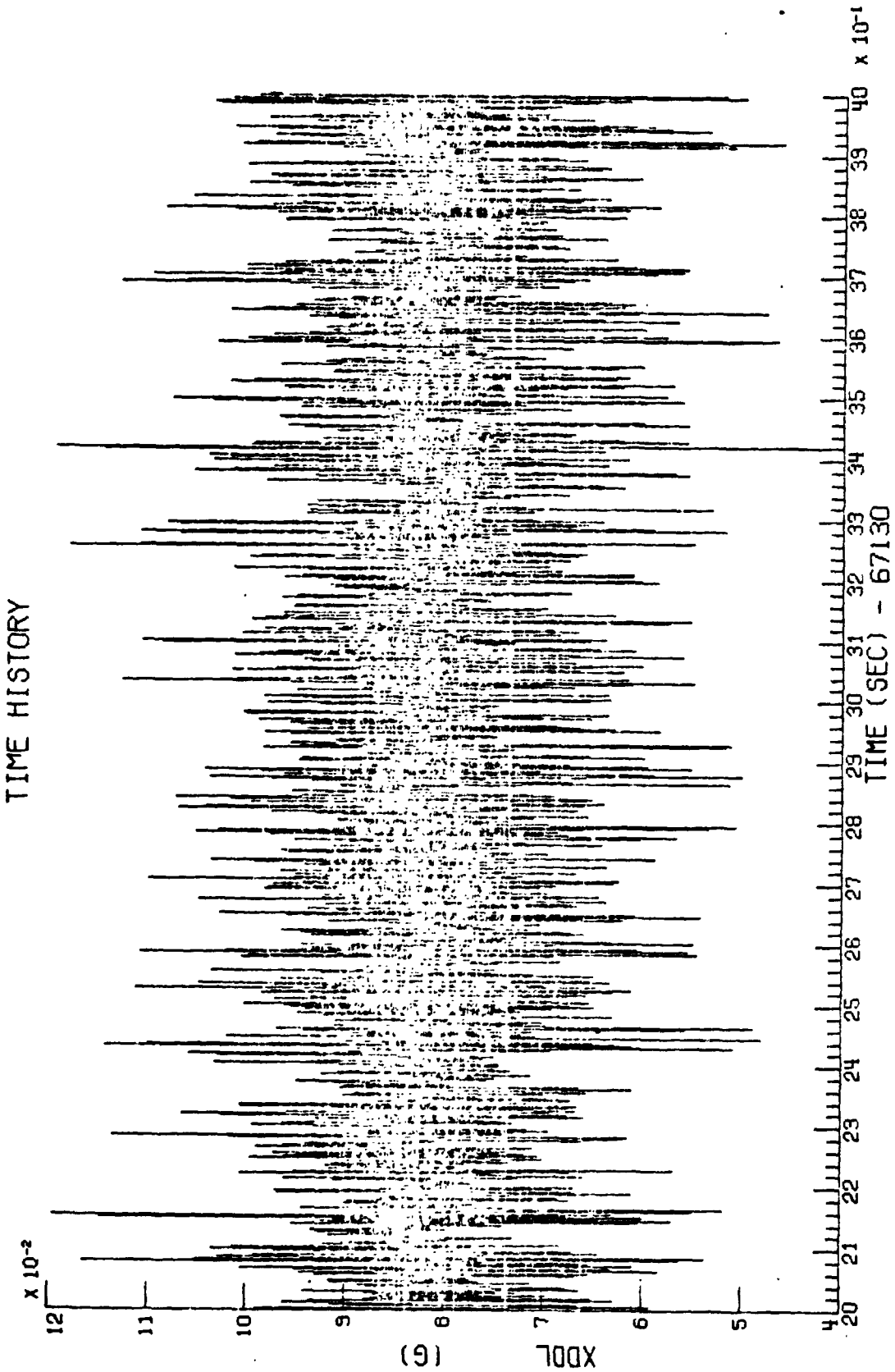
CY1850

1024 SPS

Figure 4.9b

NASA-LANGLEY STORGE ANALYSIS PROGRAM 09/22/75

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MIN = .040

MAX = .119

XDDL

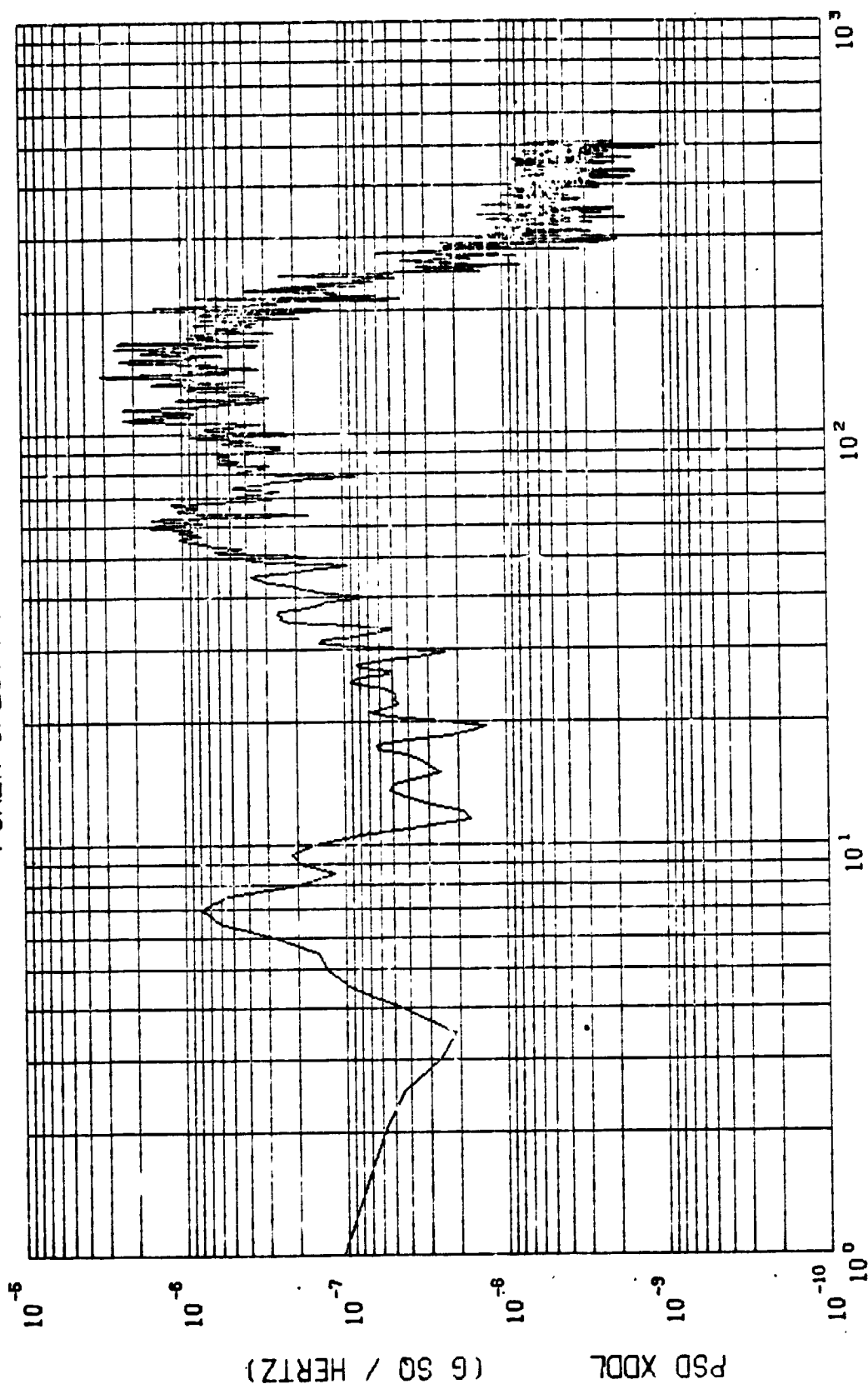
PRE-IGNITION

VIKING B FLT (CIF)

Figure 4.10a



# POWER SPECTRAL DENSITY

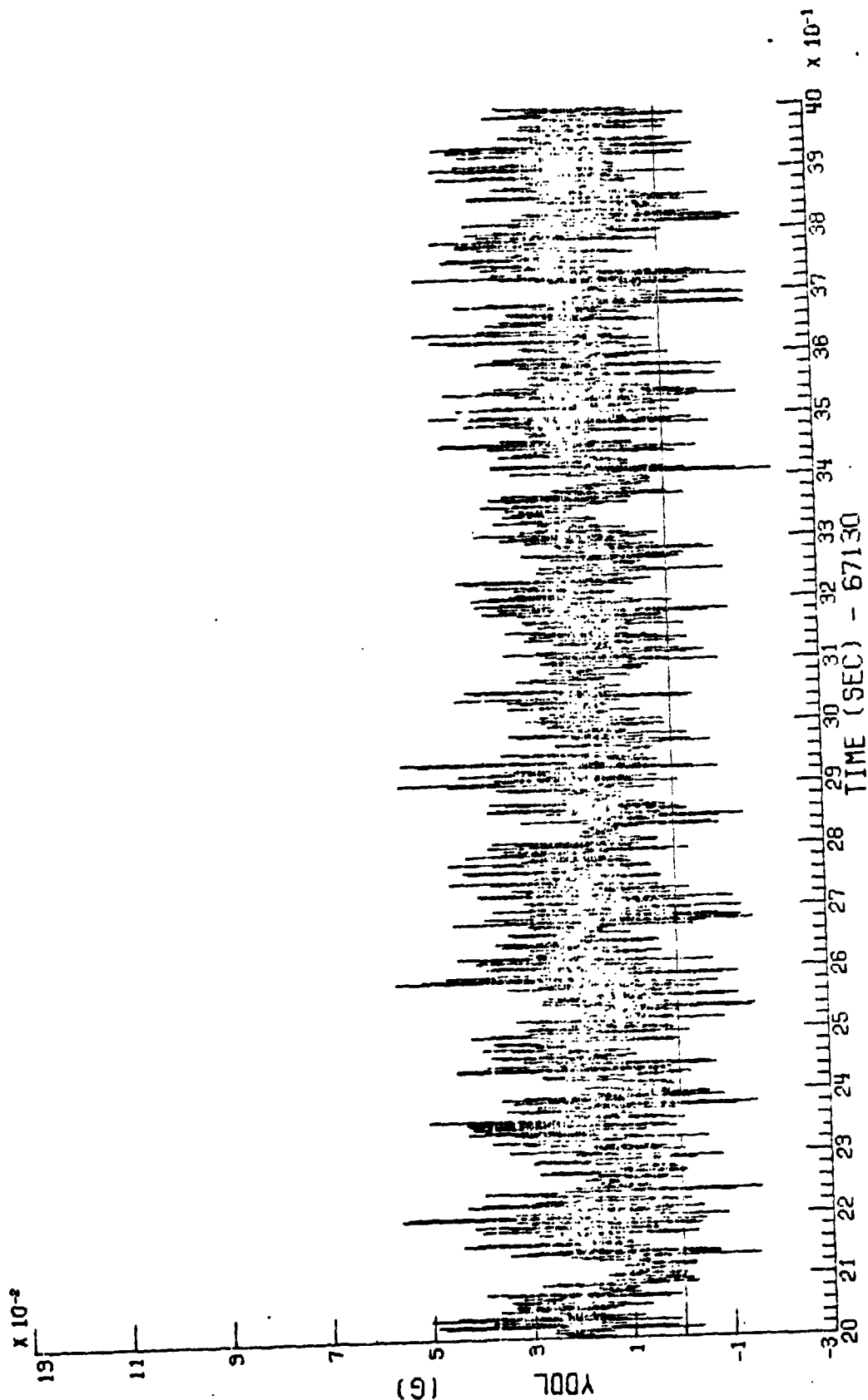


$\Delta F = .500$       START = 67132.000 SEC      STOP = 67134.000 SEC  
 MEAN =  $81521 \times 10^{-6}$        $\sigma^2 = 13214 \times 10^{-6}$        $\sigma = 11495 \times 10^{-6}$        $3\sigma = 34486 \times 10^{-6}$

VIKING B FLT (CIF)      PRE-IGNITION      XDDL

Figure 4.10b

# TIME HISTORY

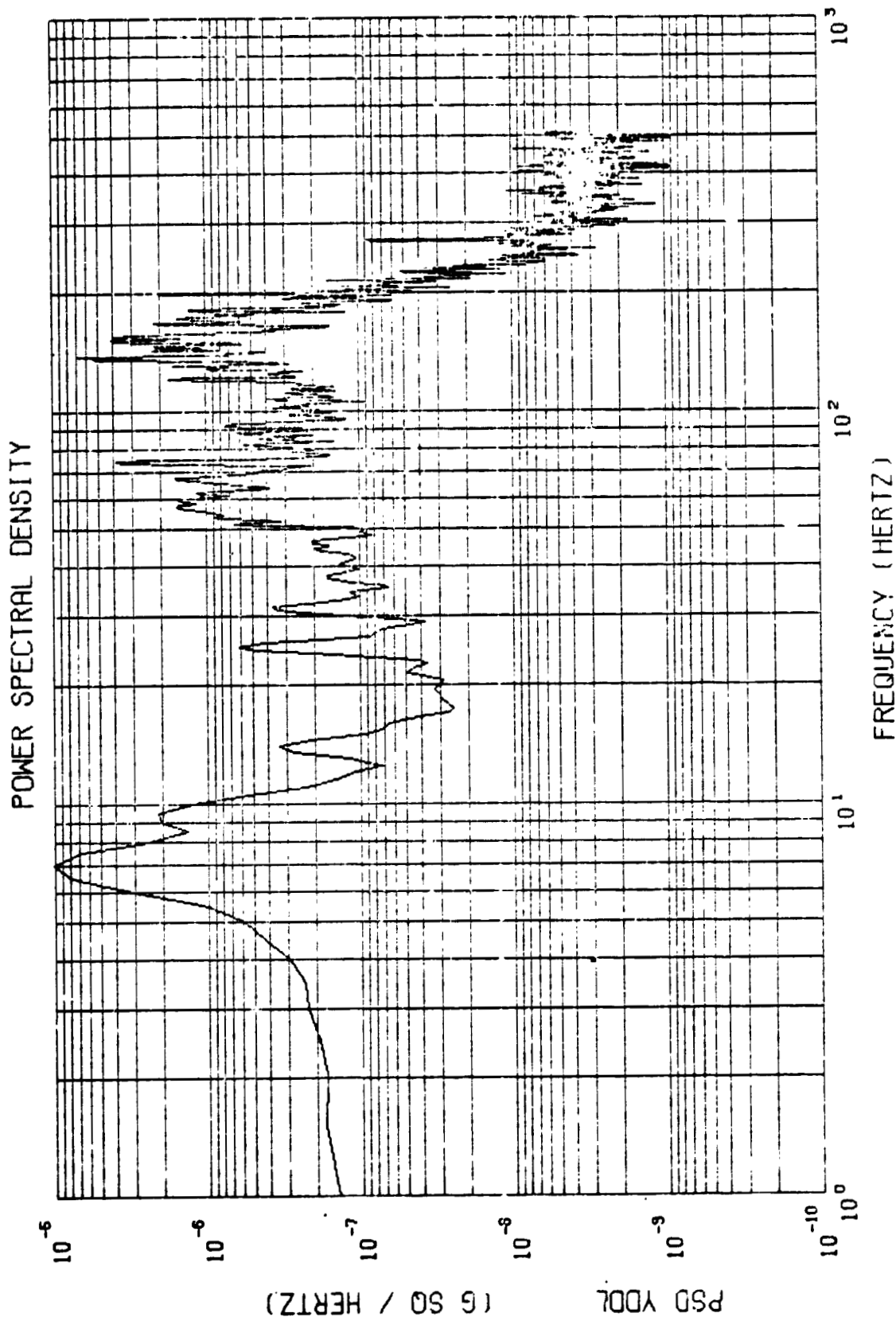


YDOL  
Figure 4.11a

PRE-IGNITION

VIKING B FLT (CIF)

NOAA LUNAR BY STATION ANALYSIS REPORT 09/23/75



$\Delta F = .500$       START = 67132.000 SEC      STOP = 67134.000 SEC  
 MEAN =  $16224 \times 10^{-5}$        $\sigma^2 = 15626 \times 10^{-5}$        $\sigma = 125 \times 10^{-4}$        $3\sigma = 37502 \times 10^{-5}$

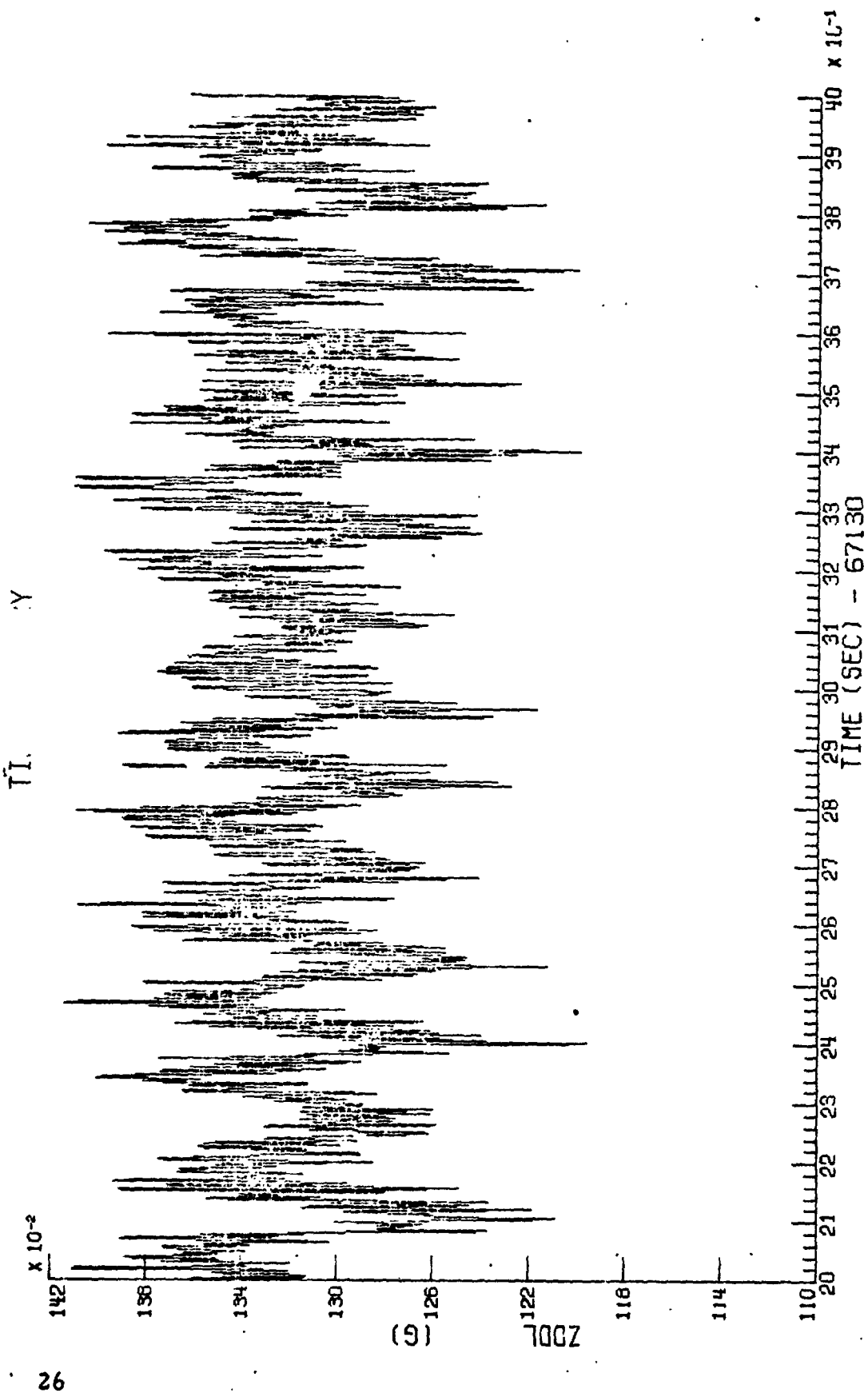
YDOL

PRE-IGNITION

VIKING B FLT (CIF)

WASA LANGLEY SIGNAL ANALYSIS PROGRAM 09/27/75

Figure 4.11b

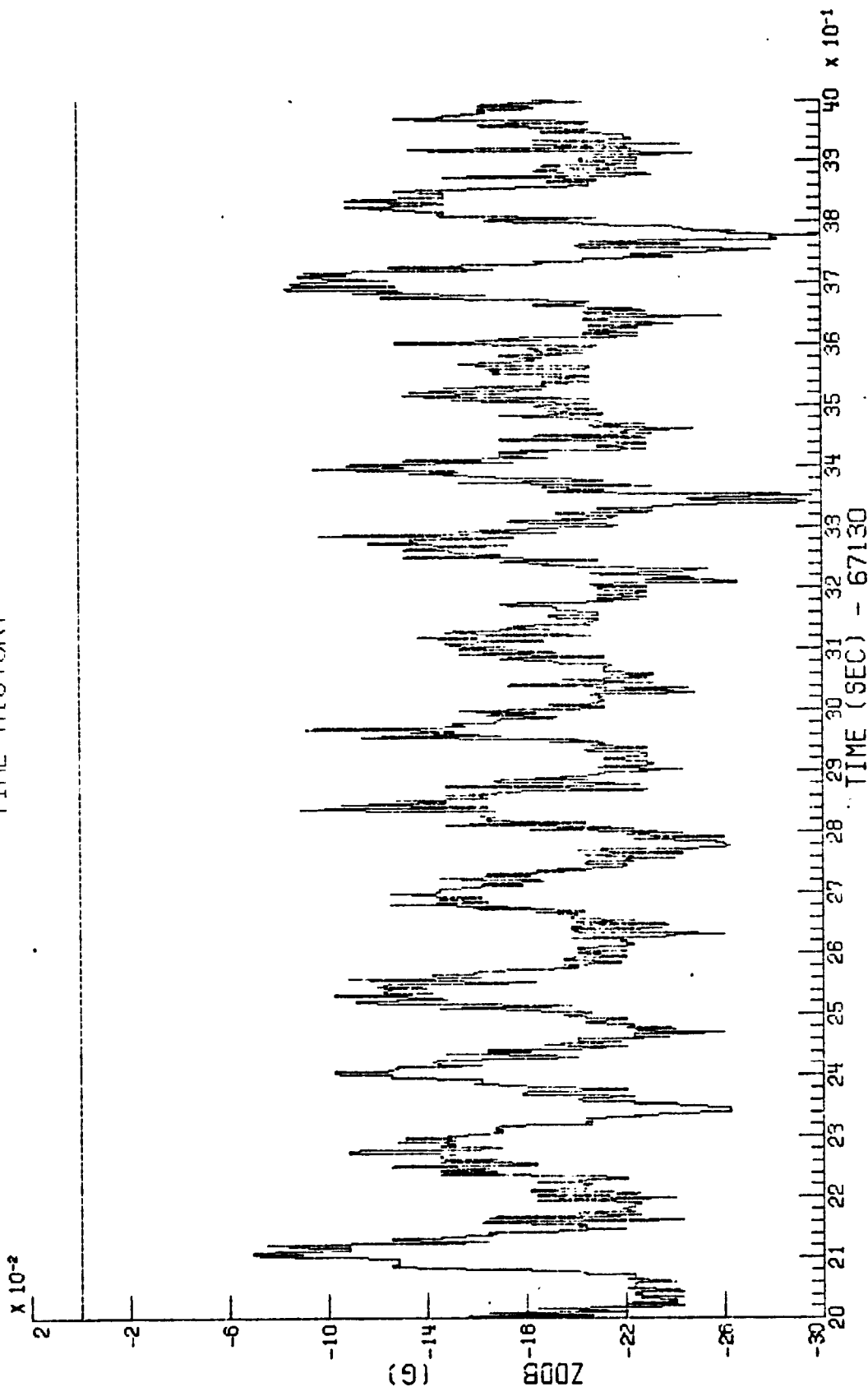


MAX = 1.414

MIN = 1.195

Figure 4.12a

# TIME HISTORY



MAX = -.069

MIN = -.239

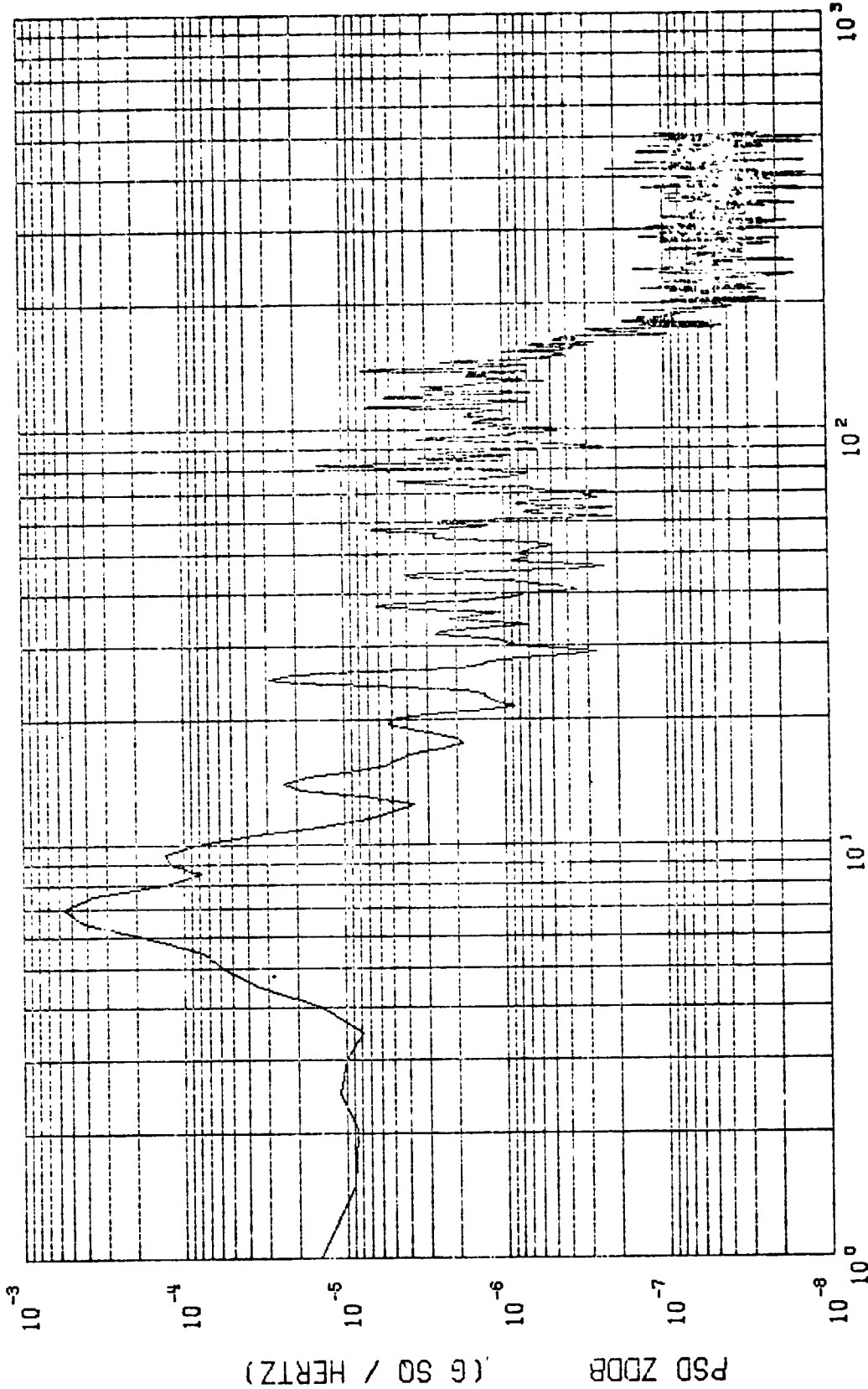
VIKING B FLT (CIF)

PRE-IGNITION

Z008

Figure 4.13a

# POWER SPECTRAL DENSITY



$\Delta F = .500$

START = 67192.000 SEC

STOP = 67194.000 SEC

MEAN =  $-188 \times 10^{-3}$

$\sigma^2 = 15468 \times 10^{-7}$

$\sigma = 39327 \times 10^{-6}$

$3\sigma = 11798 \times 10^{-5}$

VIKING B FLT 1C(F)

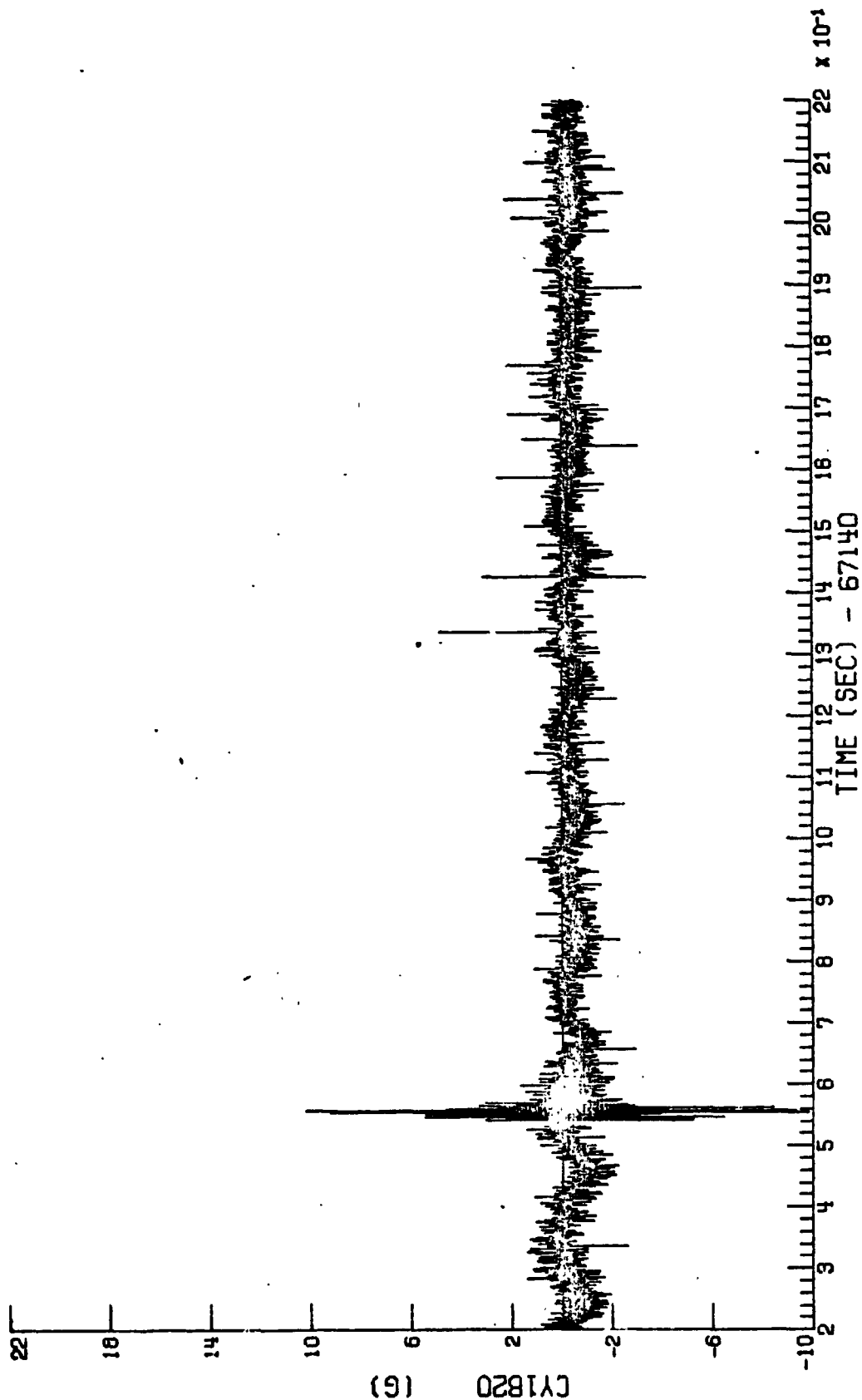
PRE-IGNITION

Z008

Figure 4.13b

# TIME HISTORY

30



MAX = 10.205

MIN = -9.838

VIKING B FLT (CIF)

STAGE 0 IGN -1

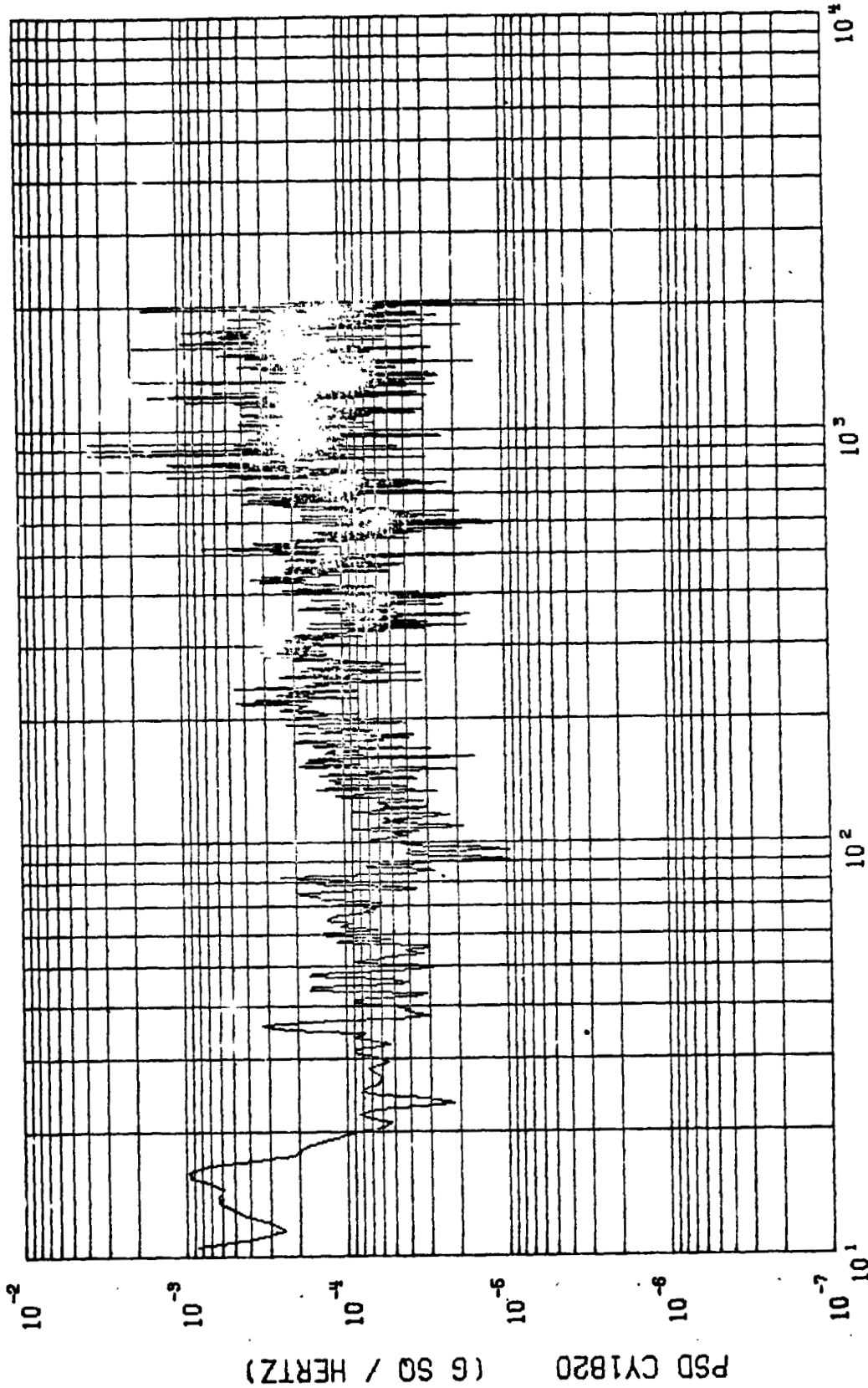
CY1820

4096 SPS

Figure 4.14a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -34551 \times 10^{-5}$   
 $\sigma^2 = 39573 \times 10^{-5}$   
 $\sigma = 62907 \times 10^{-5}$   
 $3\sigma = 18872 \times 10^{-5}$

START = 67140.200 SEC

STOP = 67142.200 SEC

VIKING B FLT (CIF)

STAGE 0 IGN - 1

CY1820

4096 SPS

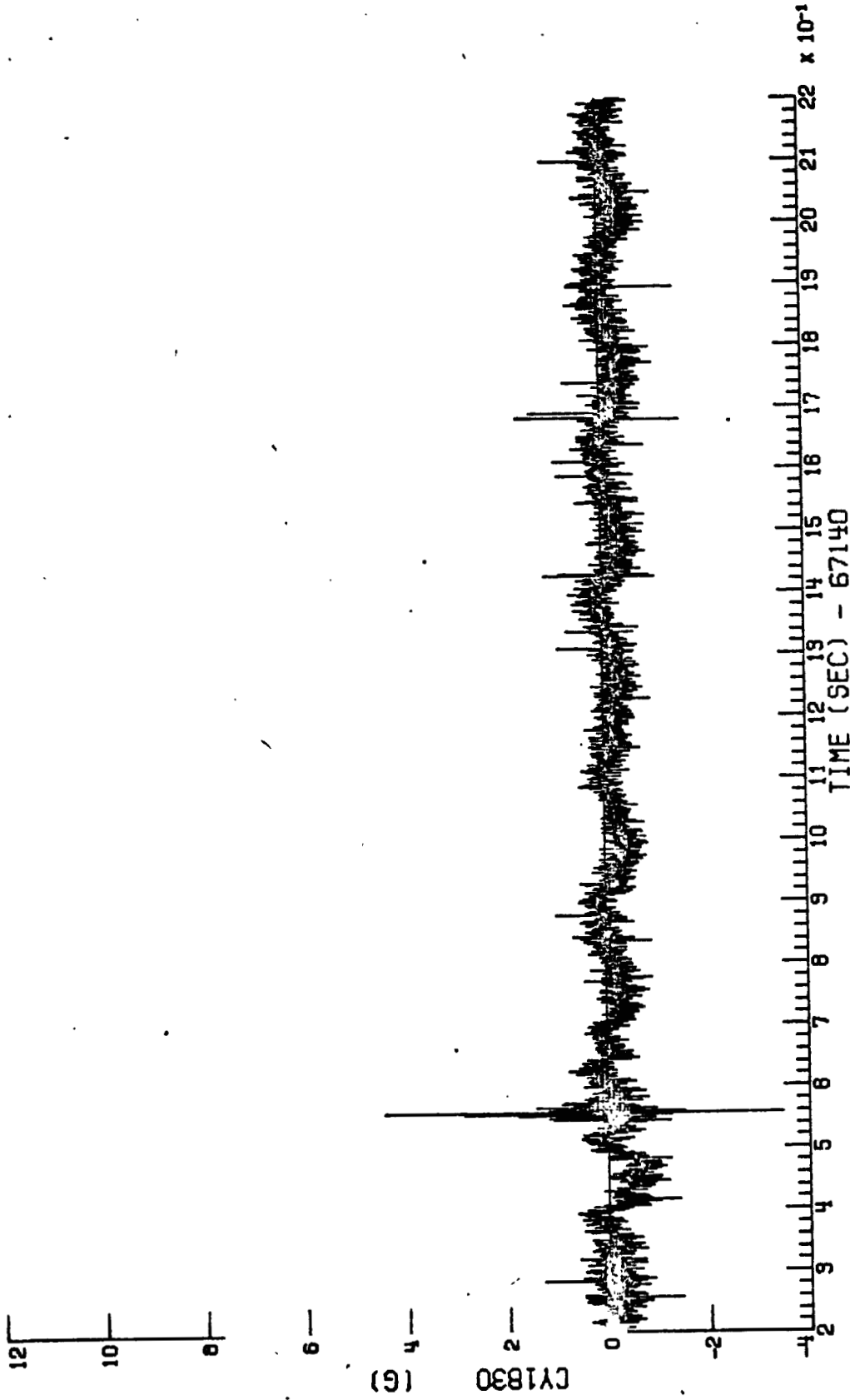
Figure 4.14b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75



# TIME HISTORY

32



MAX = 4.432

MIN = -3.484

VIKING B FLT (CIF)

STAGE 0 IGN - 1

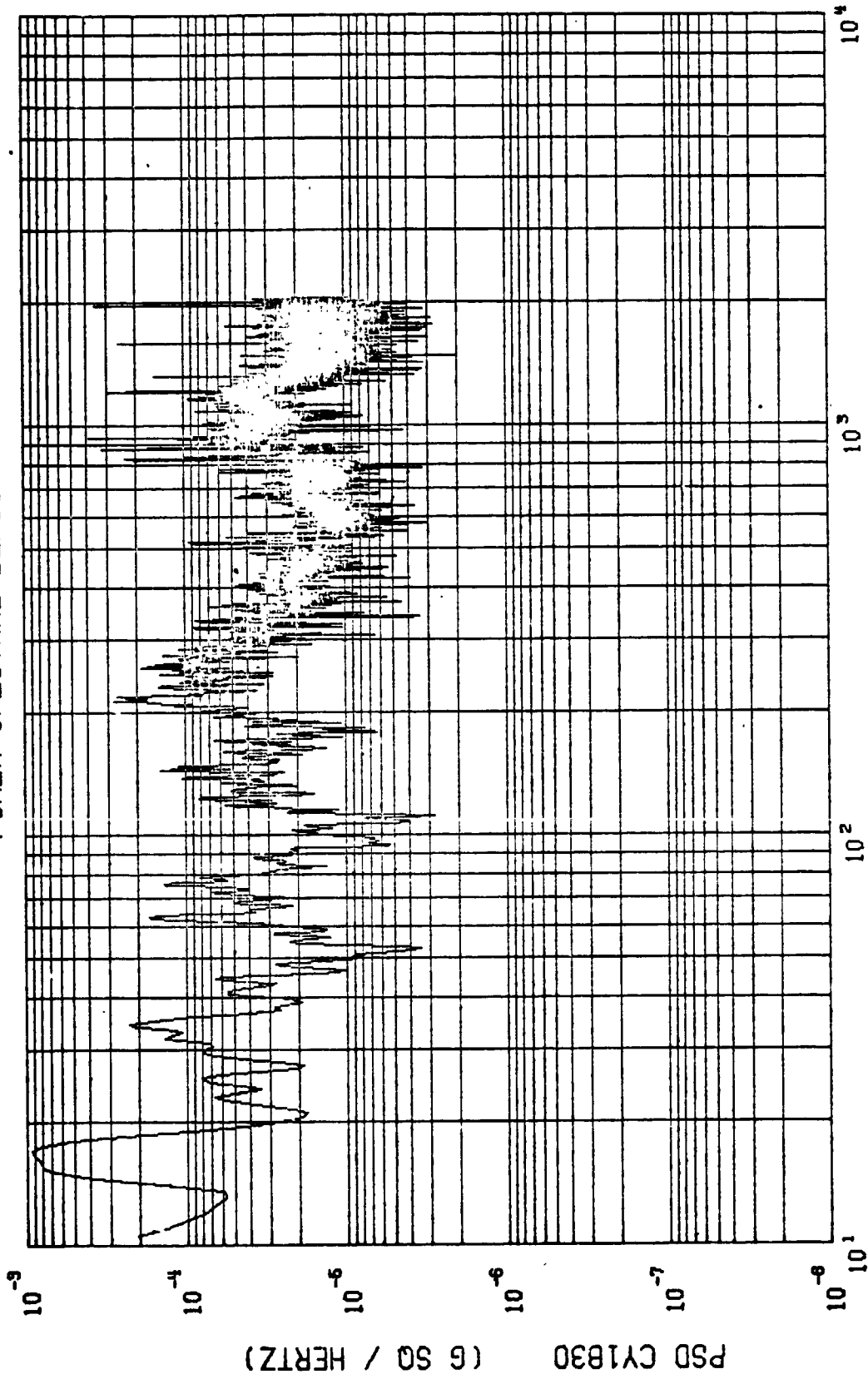
CY1830

4096 SPS

Figure 4.15a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

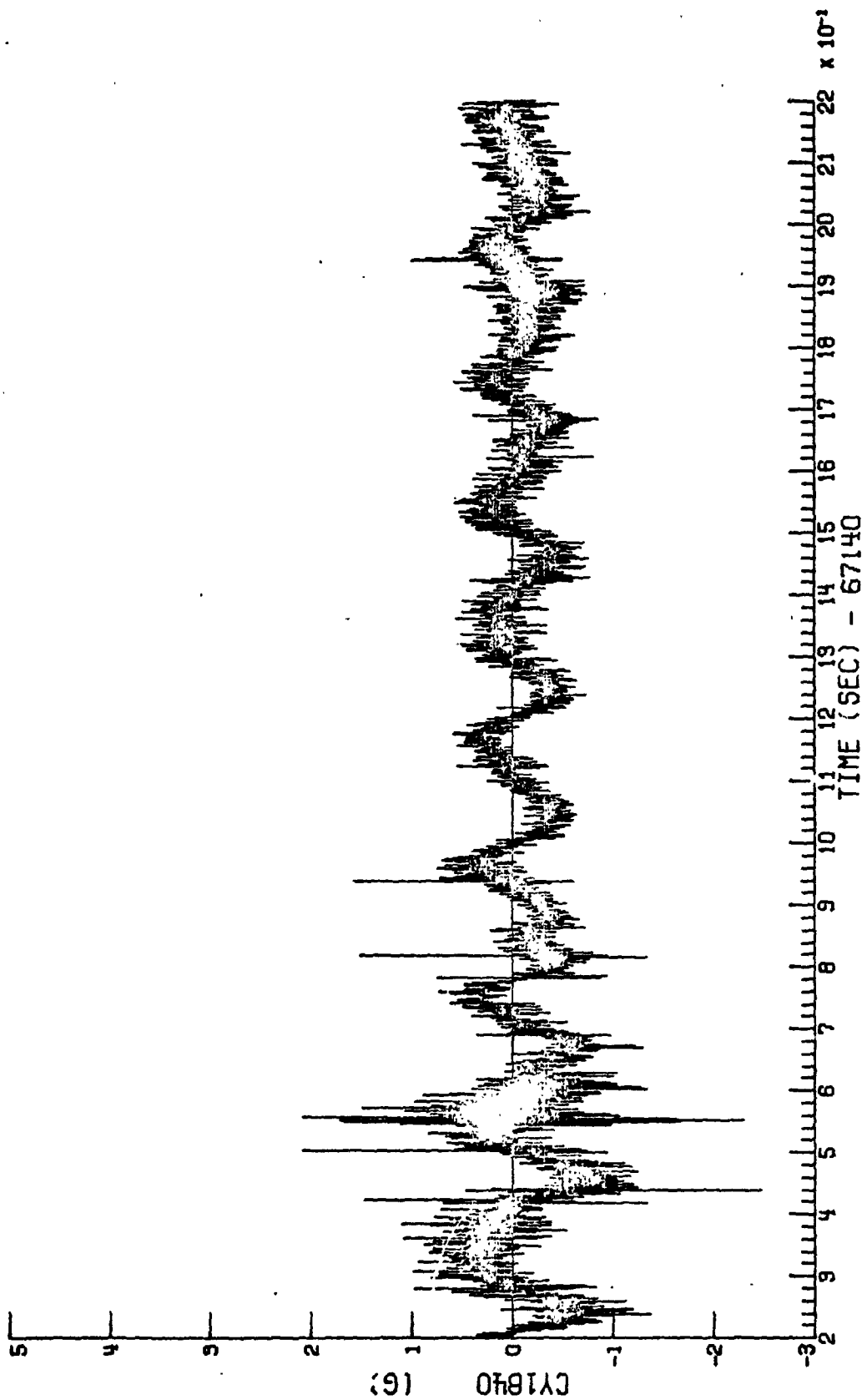
$\Delta F = .499$   
 $MEAN = -14679 \times 10^{-5}$      $\sigma^2 = 8236 \times 10^{-5}$      $\sigma = 28698 \times 10^{-5}$      $3\sigma = 86095 \times 10^{-5}$   
 $START = 67140.200 \text{ SEC}$      $STOP = 67142.200 \text{ SEC}$

VIKING B FLT (CIF)

STAGE 0 IGN - 1

CY1830

# TIME HISTORY



MAX = 2.079

MIN = -2.468

VIKING B FLT (CIF)

STAGE 0 IGN - 1

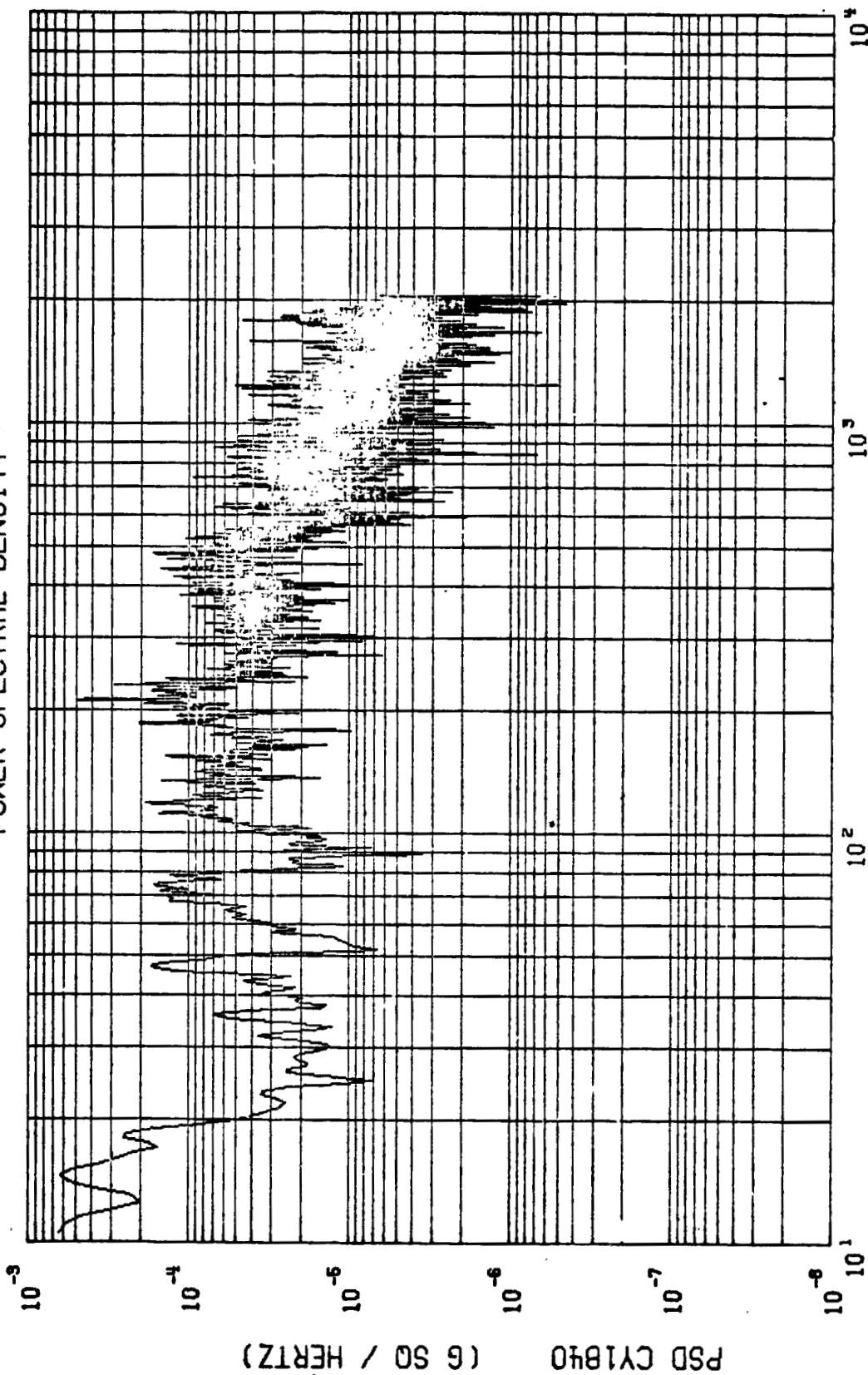
CY1840

4096 SP 5

Figure 4.16a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .439$   
 $\text{MEAN} = -86902 \times 10^{-5}$   
 $\sigma^2 = 10865 \times 10^{-5}$   
 $\sigma = 32963 \times 10^{-5}$   
 $3\sigma = 98889 \times 10^{-5}$

START = 67140.200 SEC

STOP = 67142.200 SEC

VIKING B FLT (CIF)

STAGE 0 IGN - 1

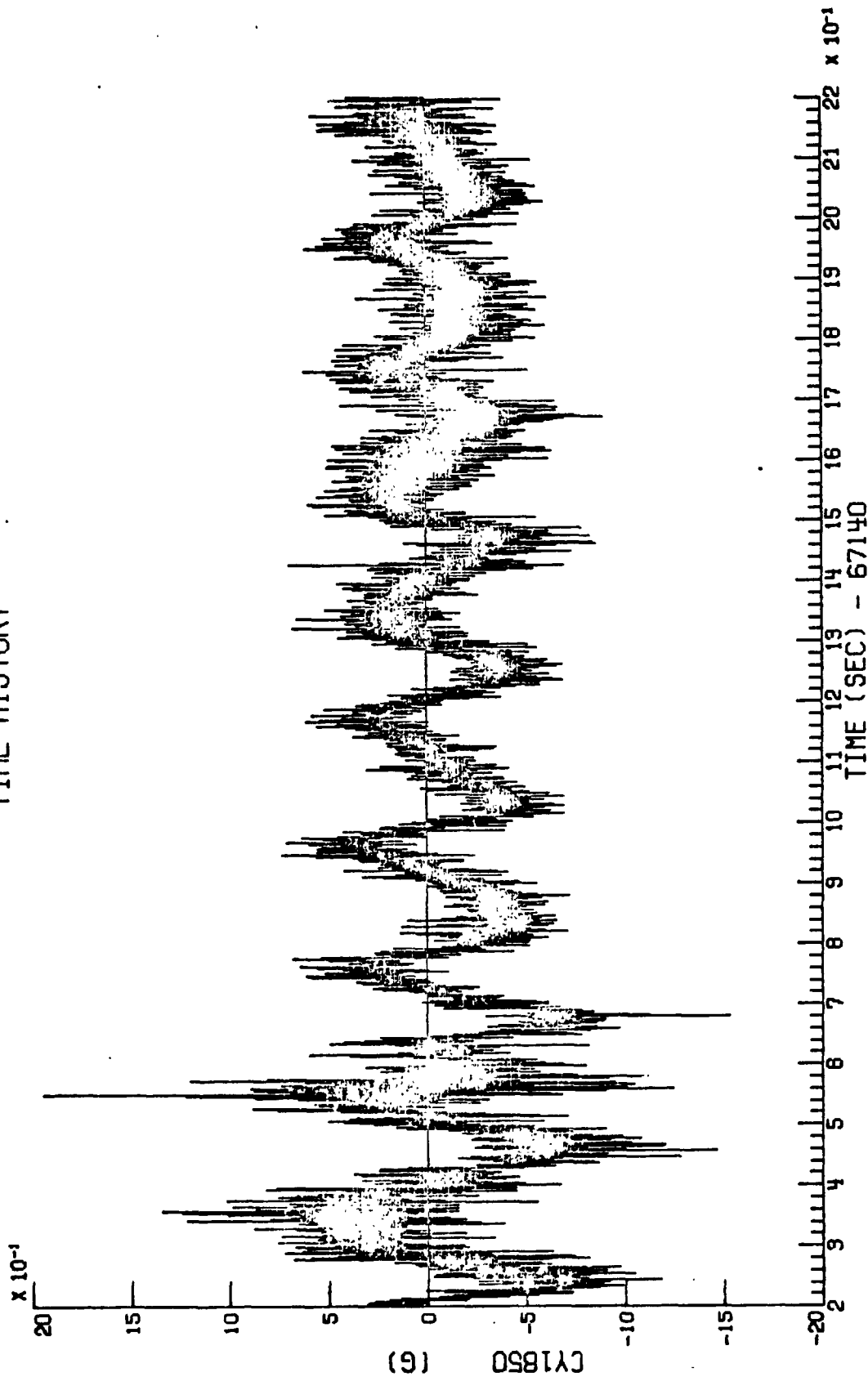
CY1840

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.16b

# TIME HISTORY



MAX = 1.946

MIN = -1.529

VIKING B FLT (CIF)

STAGE 0 IGN - 1

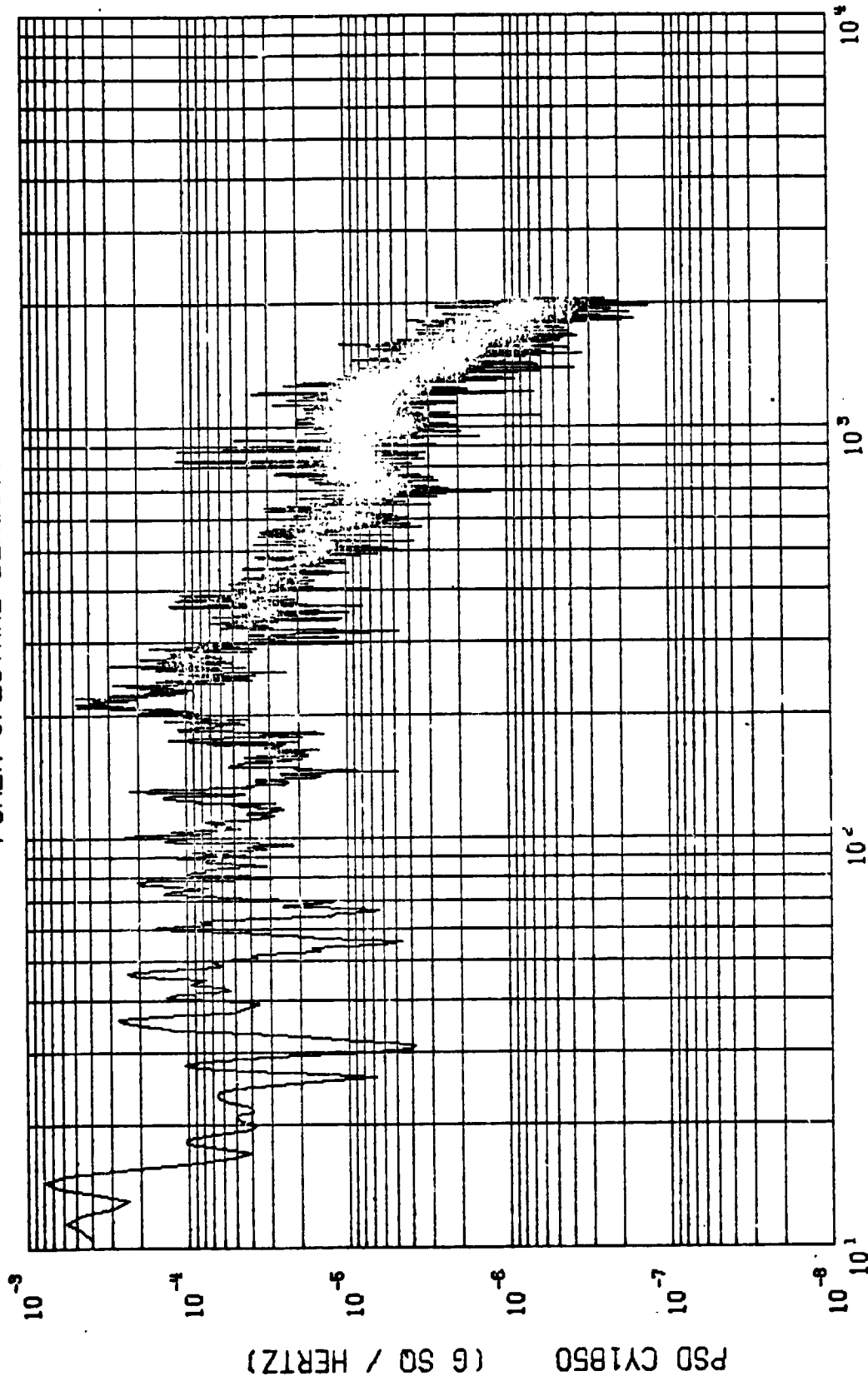
CY1850

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

4096 SPS

Figure 4.17a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$  START = 67140.200 SEC STOP = 67142.200 SEC  
 MEAN =  $-83729 \times 10^{-8}$   $\sigma^2 = 10174 \times 10^{-8}$   $\sigma = 31897 \times 10^{-8}$   $3\sigma = 95693 \times 10^{-8}$

CY1850

STAGE 0 IGN - 1

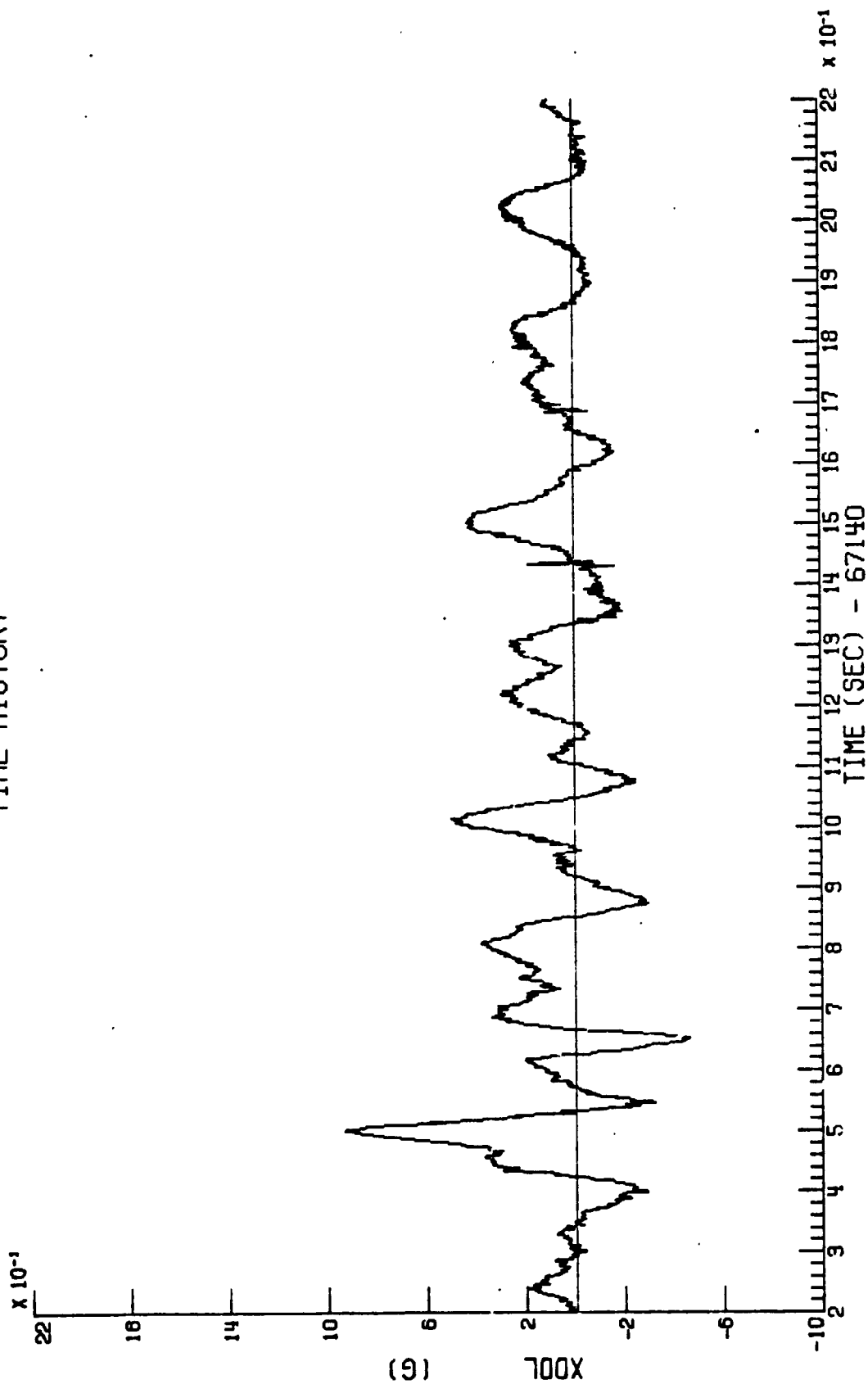
VIKING B FLT (CIF)

4096 SPS

Figure 4.17b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY



MAX = .932

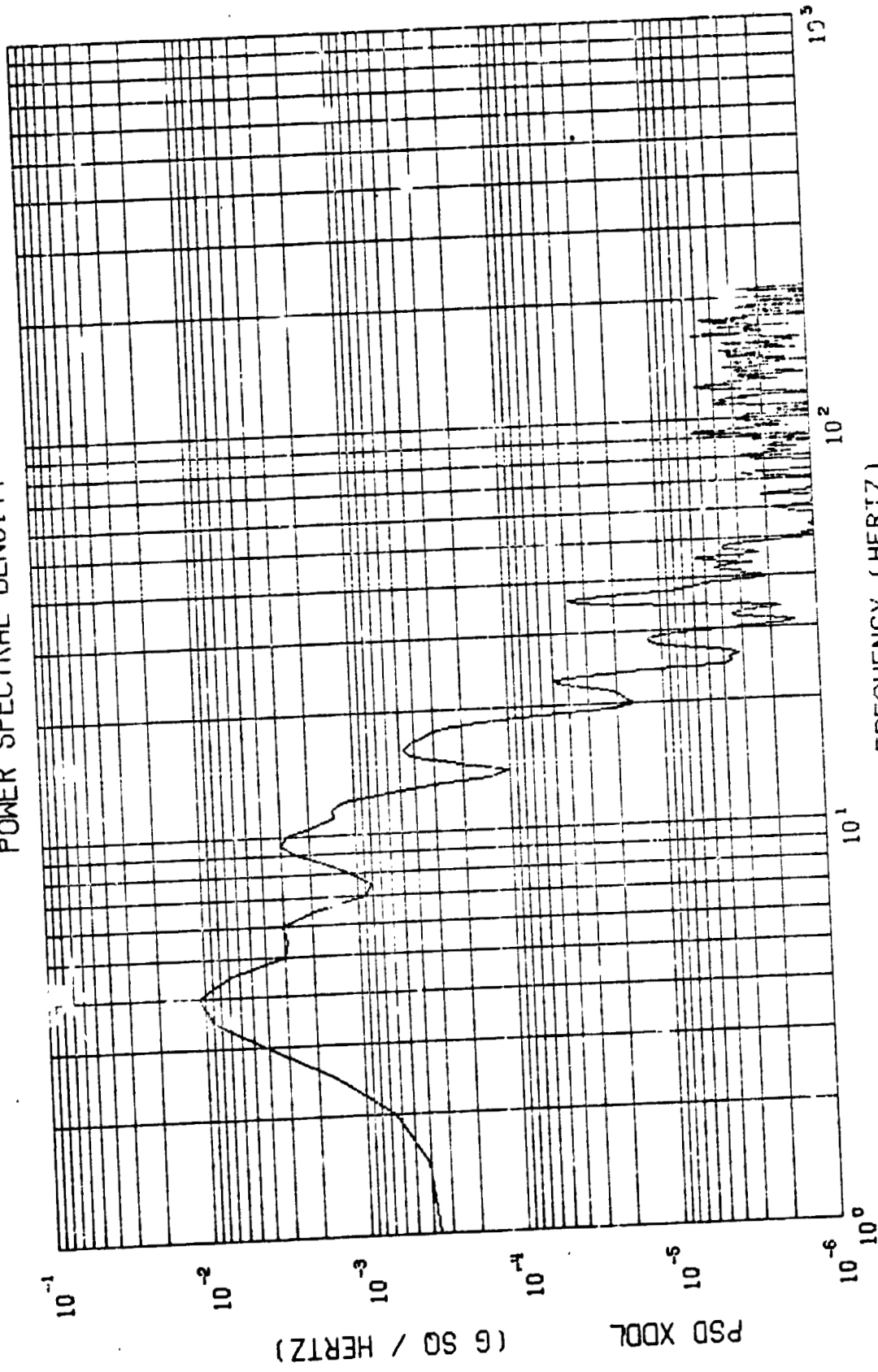
MIN = -.466

VIKING B FLT (CIF)

STAGE 0 IGN - 1

XDDL

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$   
 $MEAN = 80091 \times 10^{-6}$   
 $\sigma^2 = 34701 \times 10^{-6}$   
 $\sigma = 18628 \times 10^{-5}$   
 $3\sigma = 55885 \times 10^{-5}$

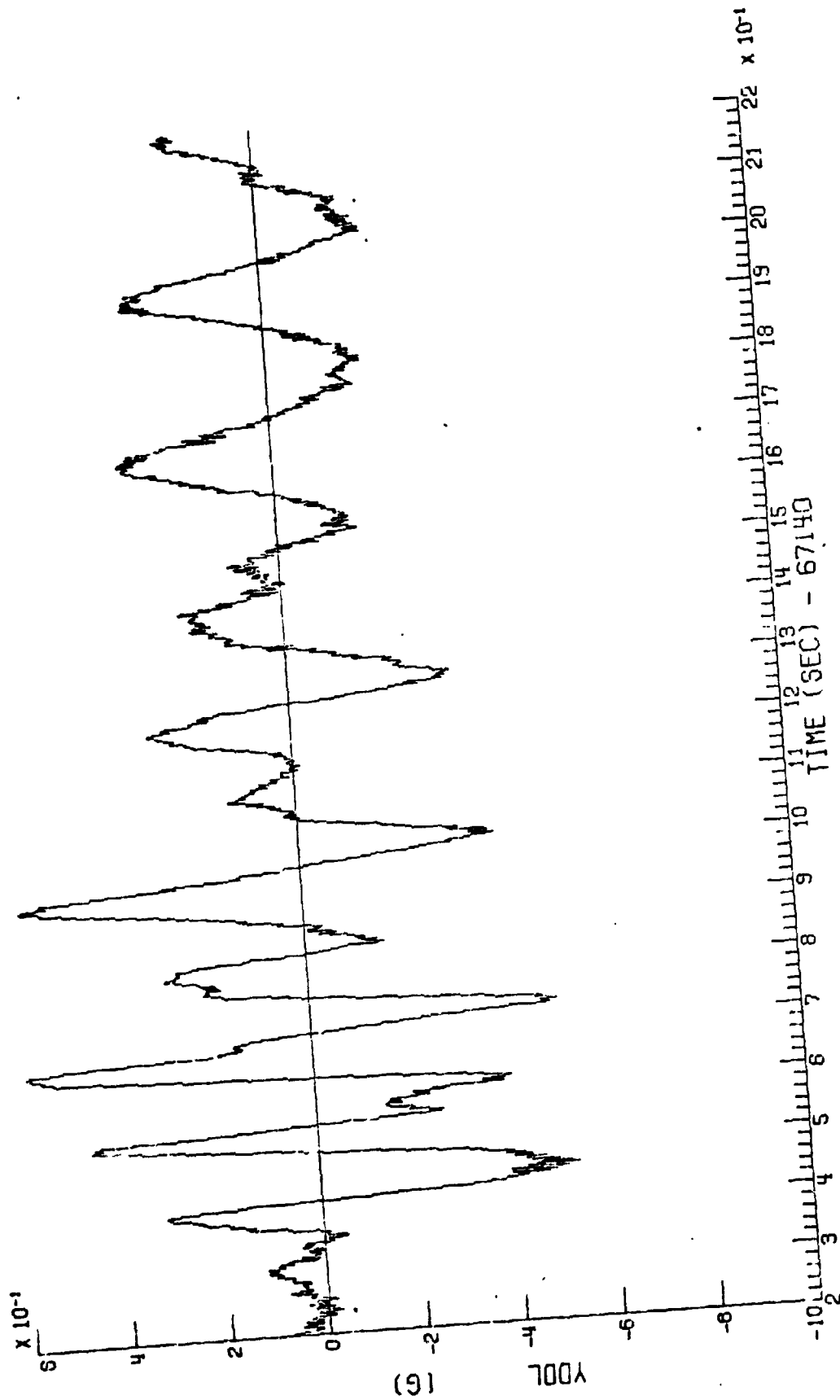
START = 67140.200 SEC

STOP = 67142.200 SEC

VIKING B FLT (CIF)  
 STAGE 0 IGN - 1  
 XDDL  
 Figure 4.18b



# TIME HISTORY



40

MIN = -.530

MAX = .587

YDDL

STAGE 0 IGN - 1

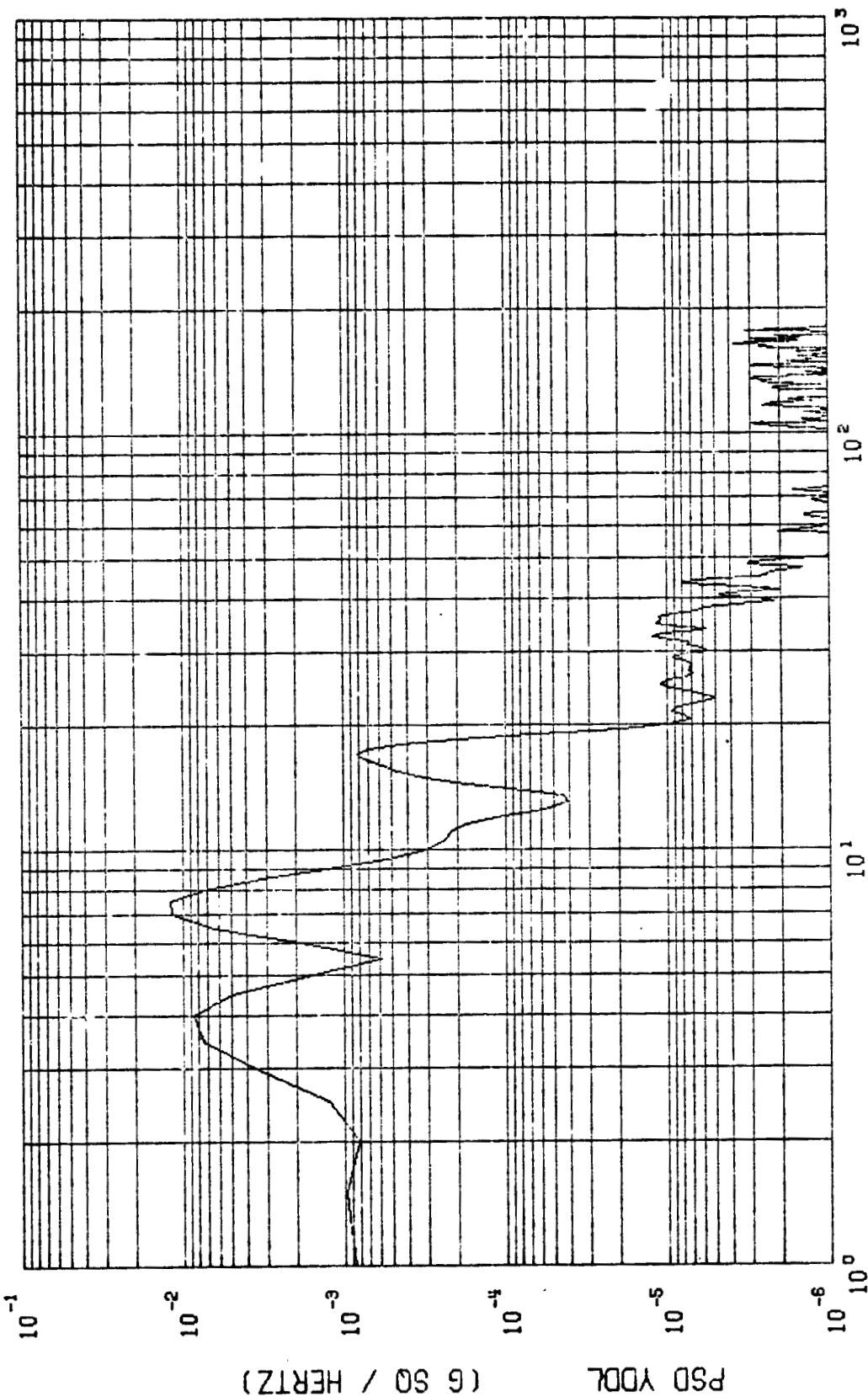
Figure 4.19a

VIKING B FLT (CIF)

09/23/75

MECHANICAL SYSTEM ANALYSIS PROGRAM

# POWER SPECTRAL DENSITY



$\Delta F = .500$       START = 67140.200 SEC      STOP = 67142.200 SEC  
 MEAN =  $16168 \times 10^{-5}$        $\sigma^2 = 40978 \times 10^{-5}$        $\sigma = 20243 \times 10^{-5}$        $3\sigma = 60729 \times 10^{-5}$

YDDI

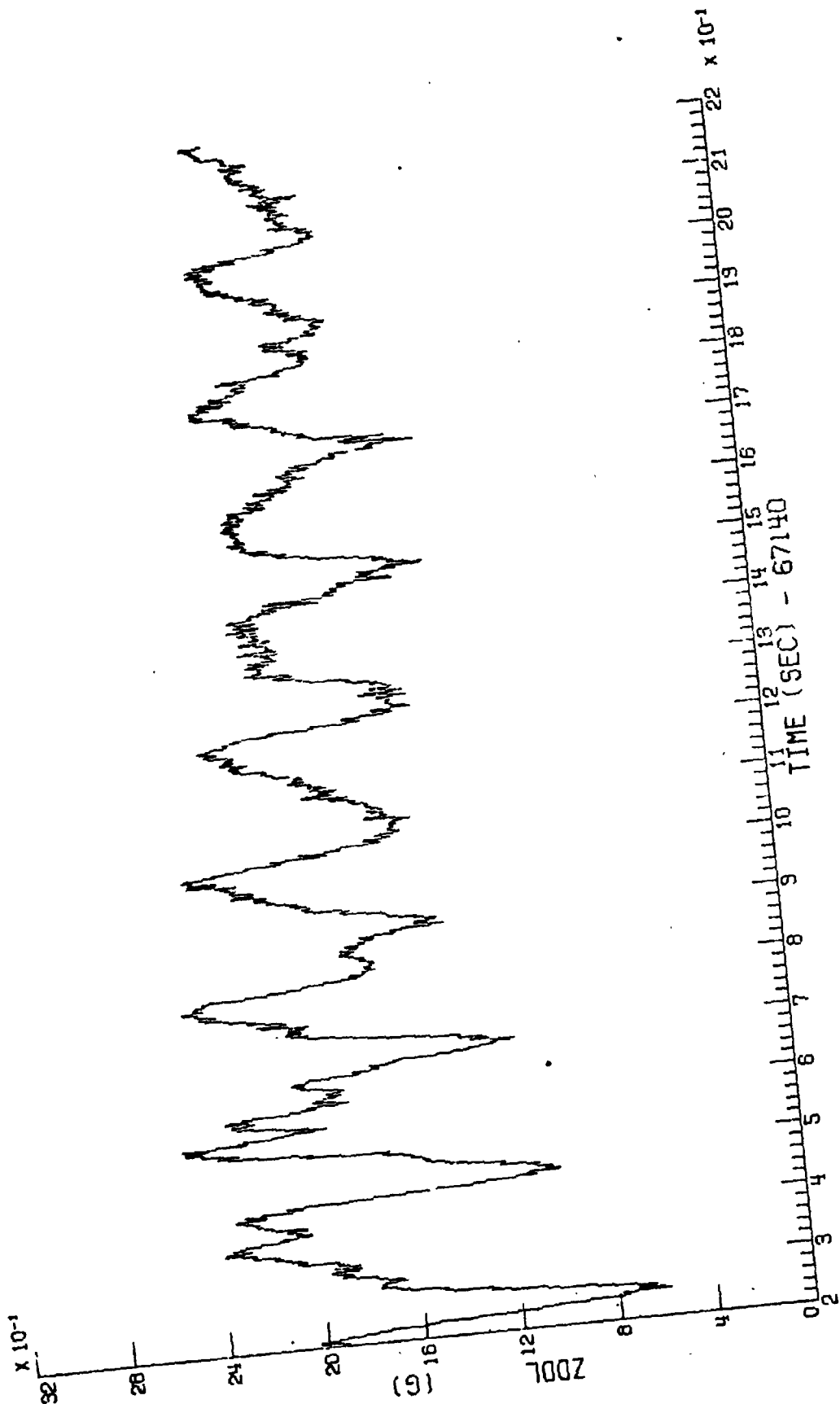
STAGE 0 IGN - 1

VIKING B FLT (CIF)

Figure 4.19b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# TIME HISTORY



MIN = .592

MAX = 2.524

ZDOL

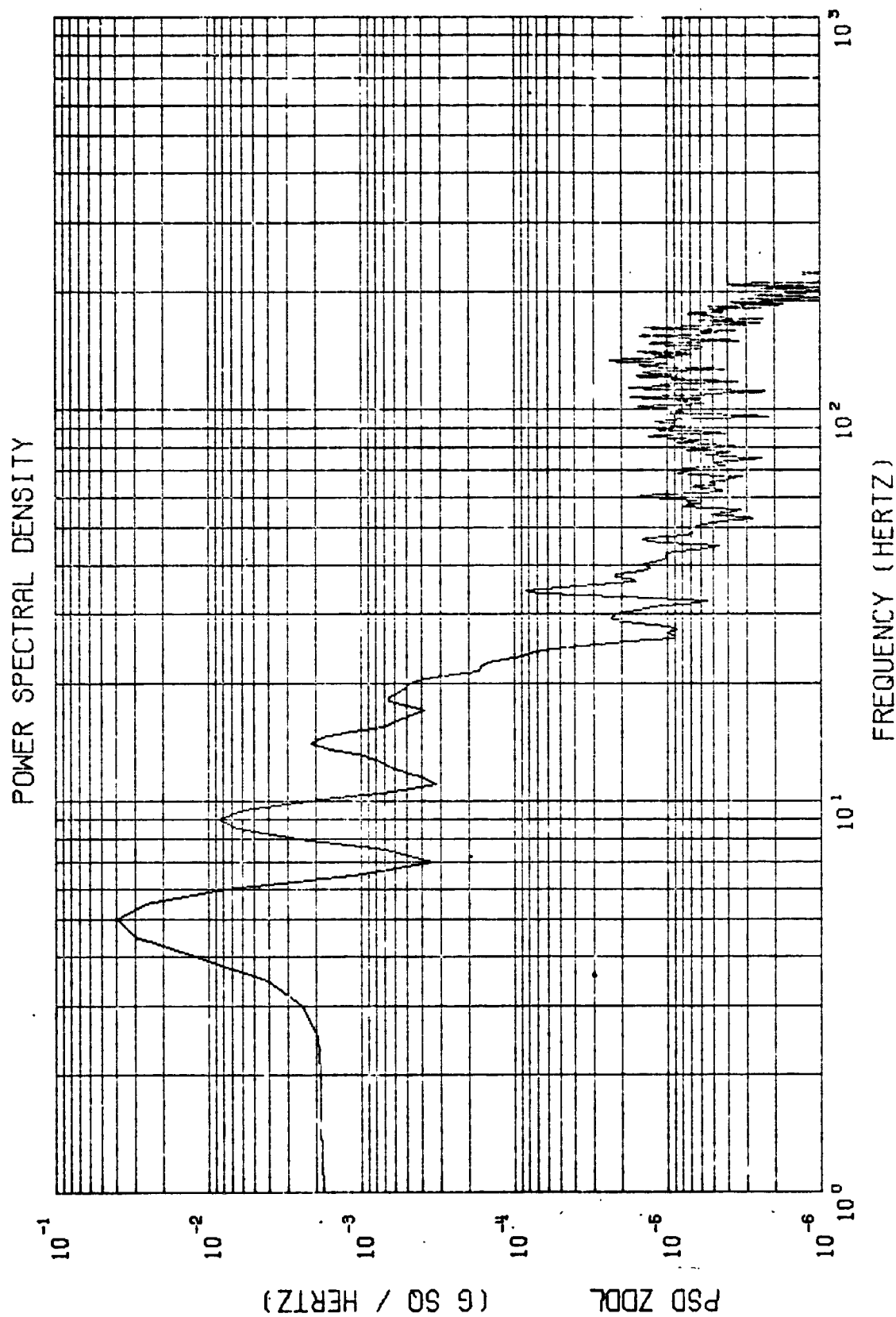
STAGE 0 IGN - 1

Figure 4.20a

VIKING B FLT (CIF)

09/23/75

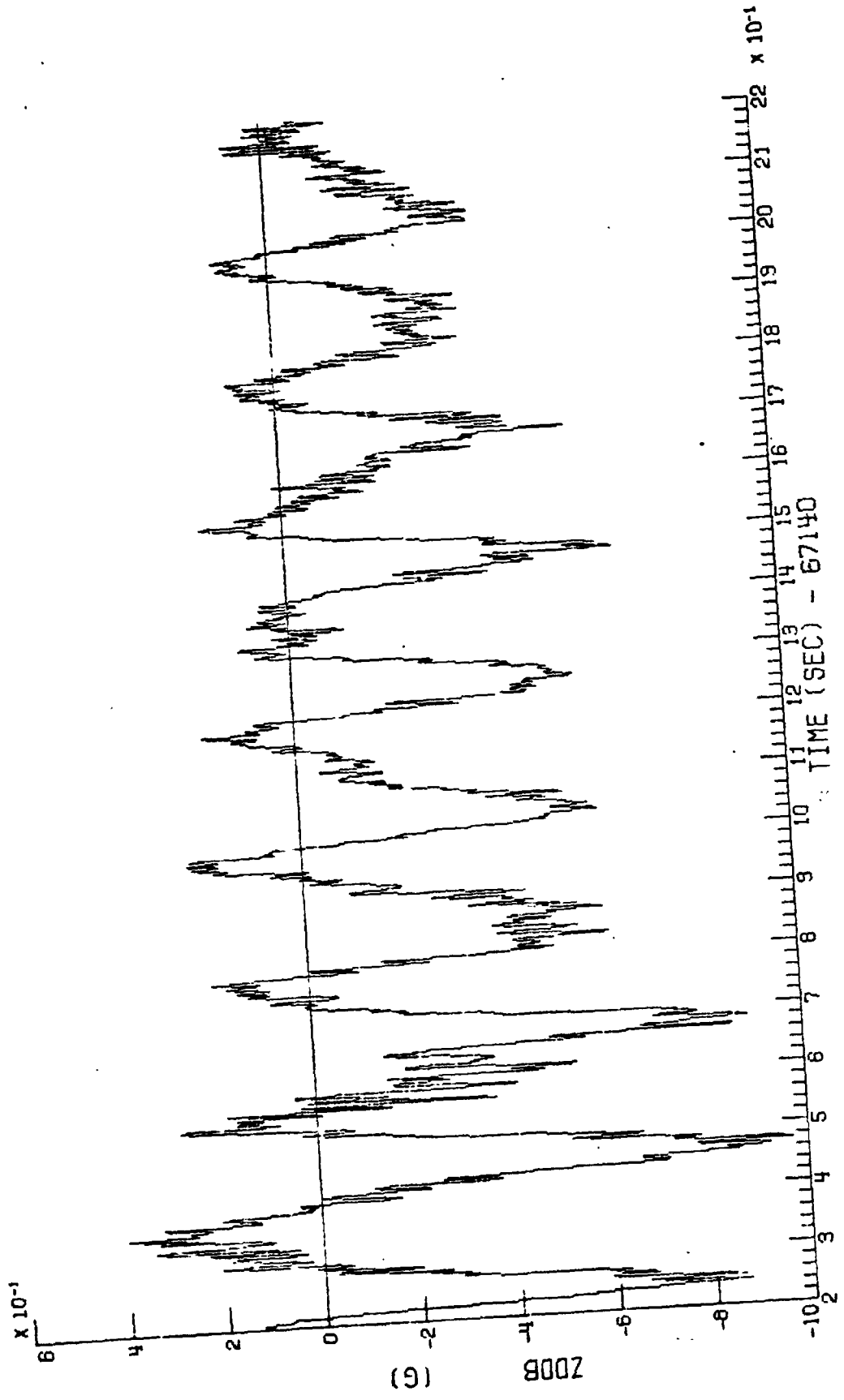
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM



$\Delta F = .500$   
 $\text{MEAN} = 18553 \times 10^{-4}$      $\sigma^2 = 90274 \times 10^{-5}$      $\sigma = 30045 \times 10^{-5}$      $3\sigma = 90137 \times 10^{-5}$   
 $\text{START} = 67140.200 \text{ SEC}$      $\text{STOP} = 67142.200 \text{ SEC}$

VIKING B FLT (CIF)  
 STAGE 0 IGN - 1  
 ZDDL

# TIME HISTORY



44

MIN = -.970

MAX = .395

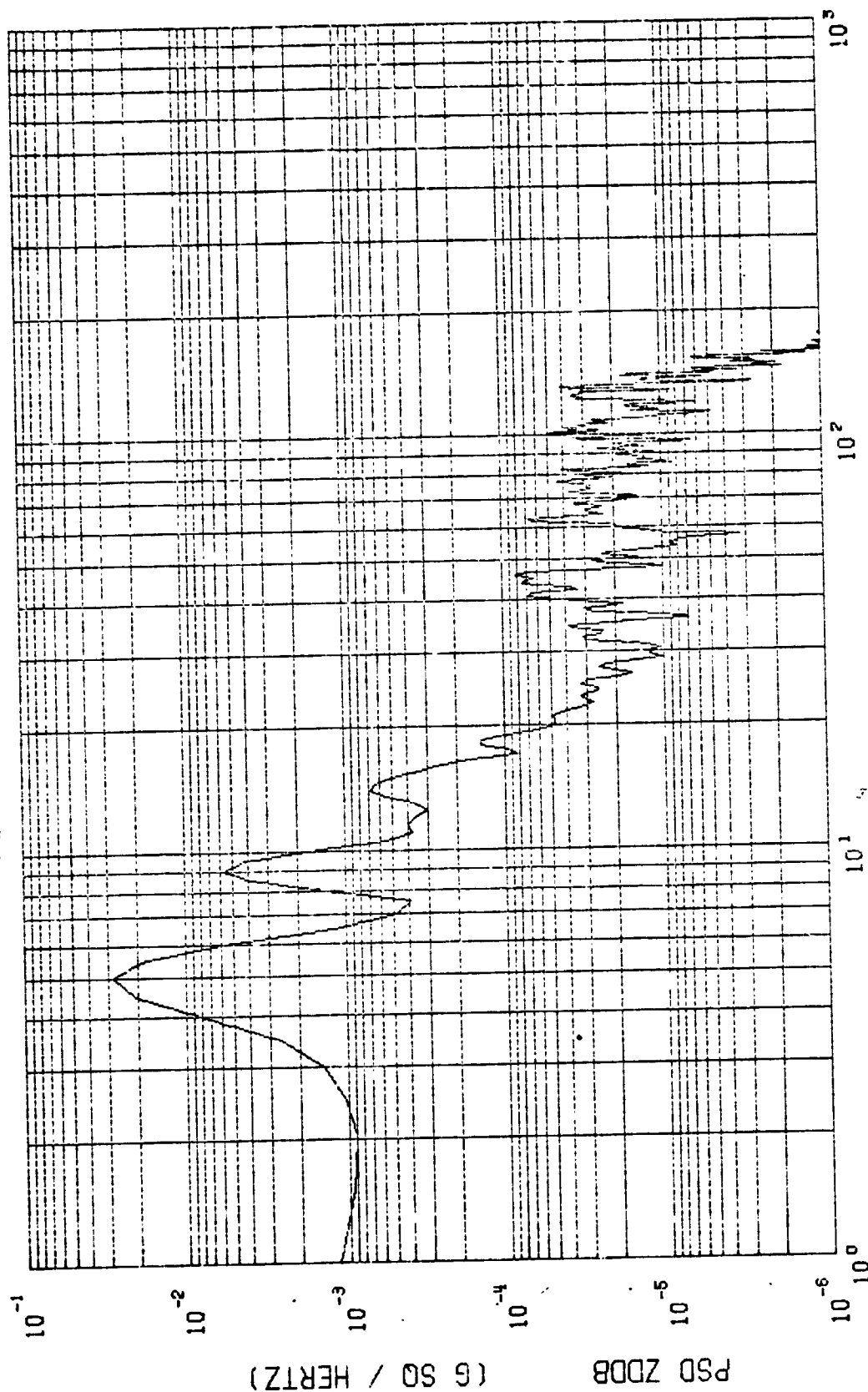
Z00B  
Figure 4.21a

STAGE 0 IGN - 1

VIKING B FLT (CIF)

NSA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$  START = 67140.200 SEC STOP = 67142.200 SEC  
 MEAN =  $-13504 \times 10^{-5}$   $\sigma^2 = 61794 \times 10^{-5}$   $\sigma = 24858 \times 10^{-5}$   $3\sigma = 74575 \times 10^{-5}$

VIKING B FLT (CIF)

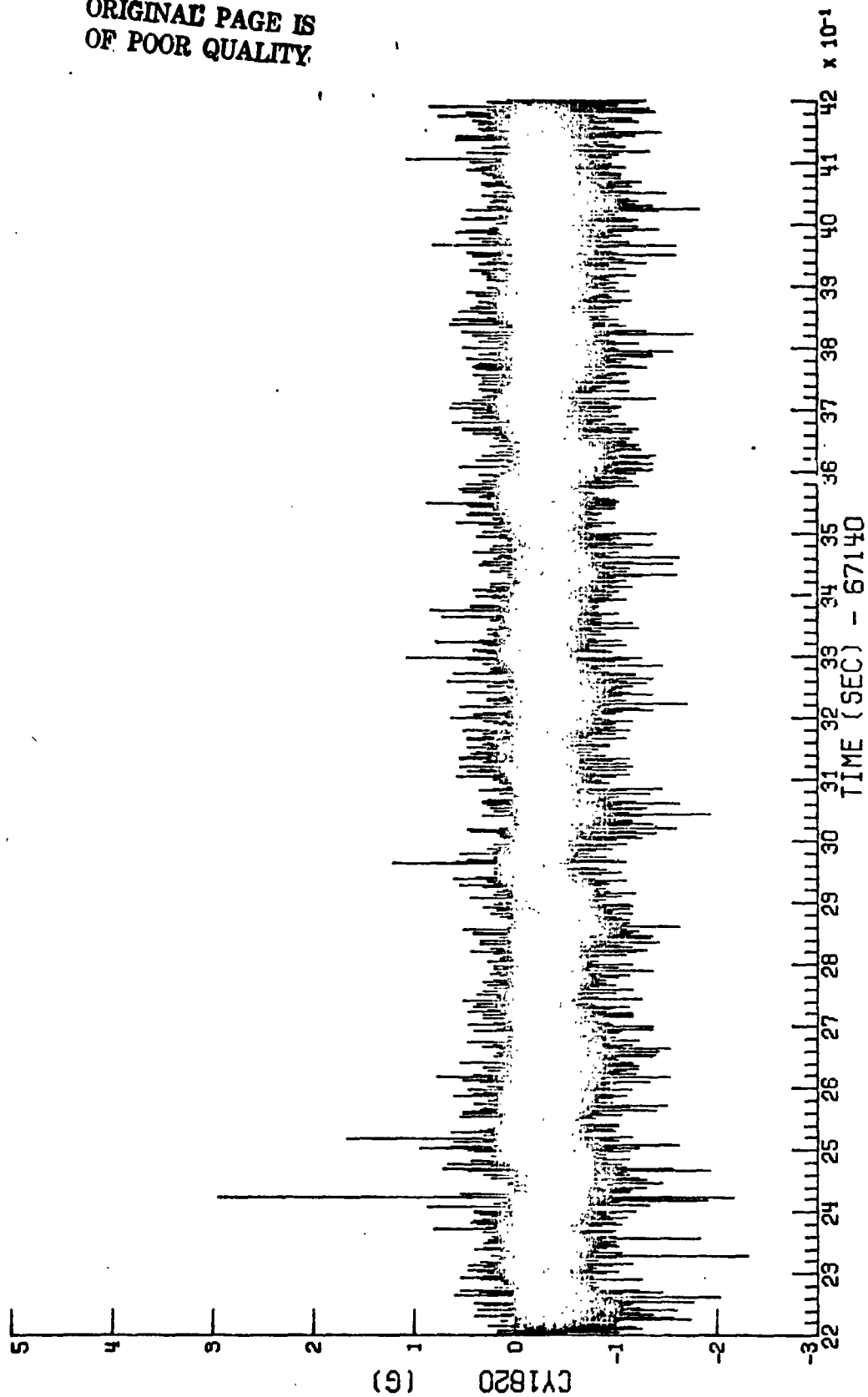
STAGE 0 IGN - 1

ZDOB

Figure 4.21b

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# TIME HISTORY



MAX = 2.934

MIN = -2.301

VIKING B FLT (CIF)

STAGE 0 IGN - 2

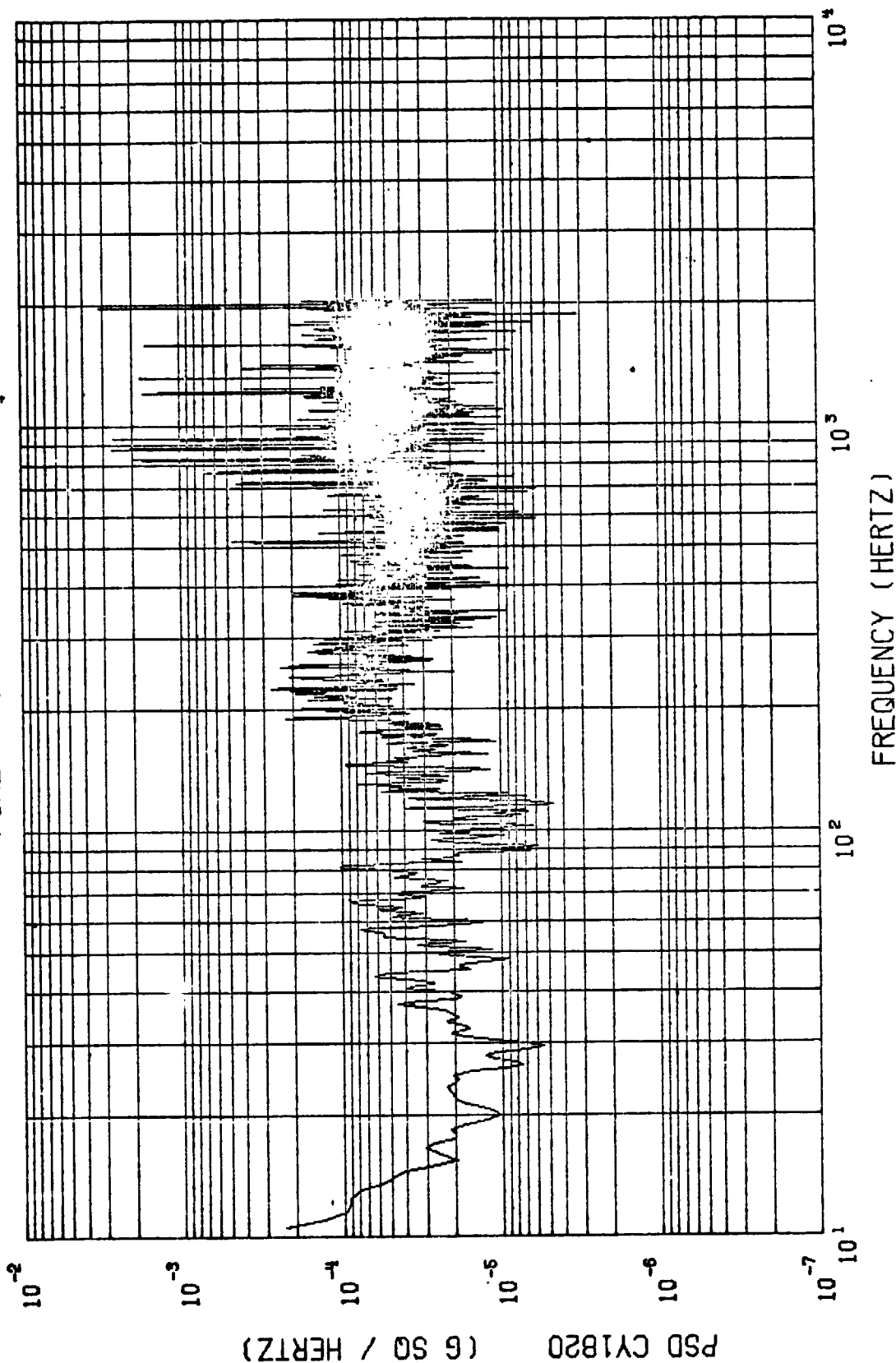
CY1820

4096 SPS

Figure 4.22a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $\text{MEAN} = -34218 \times 10^{-5}$   
 $\sigma^2 = 14481 \times 10^{-5}$   
 $\sigma = 38054 \times 10^{-5}$   
 $3\sigma = 11416 \times 10^{-5}$

START = 67142.200 SEC

STOP = 67144.199 SEC

VIKING B FLT (CIF)

STAGE 0 IGN - 2

CY1820

4096 SPS

Figure 4.22b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75



# TIME HISTORY

48

$\times 10^{-1}$

20

15

10

5

(g)

CY1830

-10

-15

-20

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

$\times 10^{-1}$

TIME (SEC) - 67140

MAX = 1.255

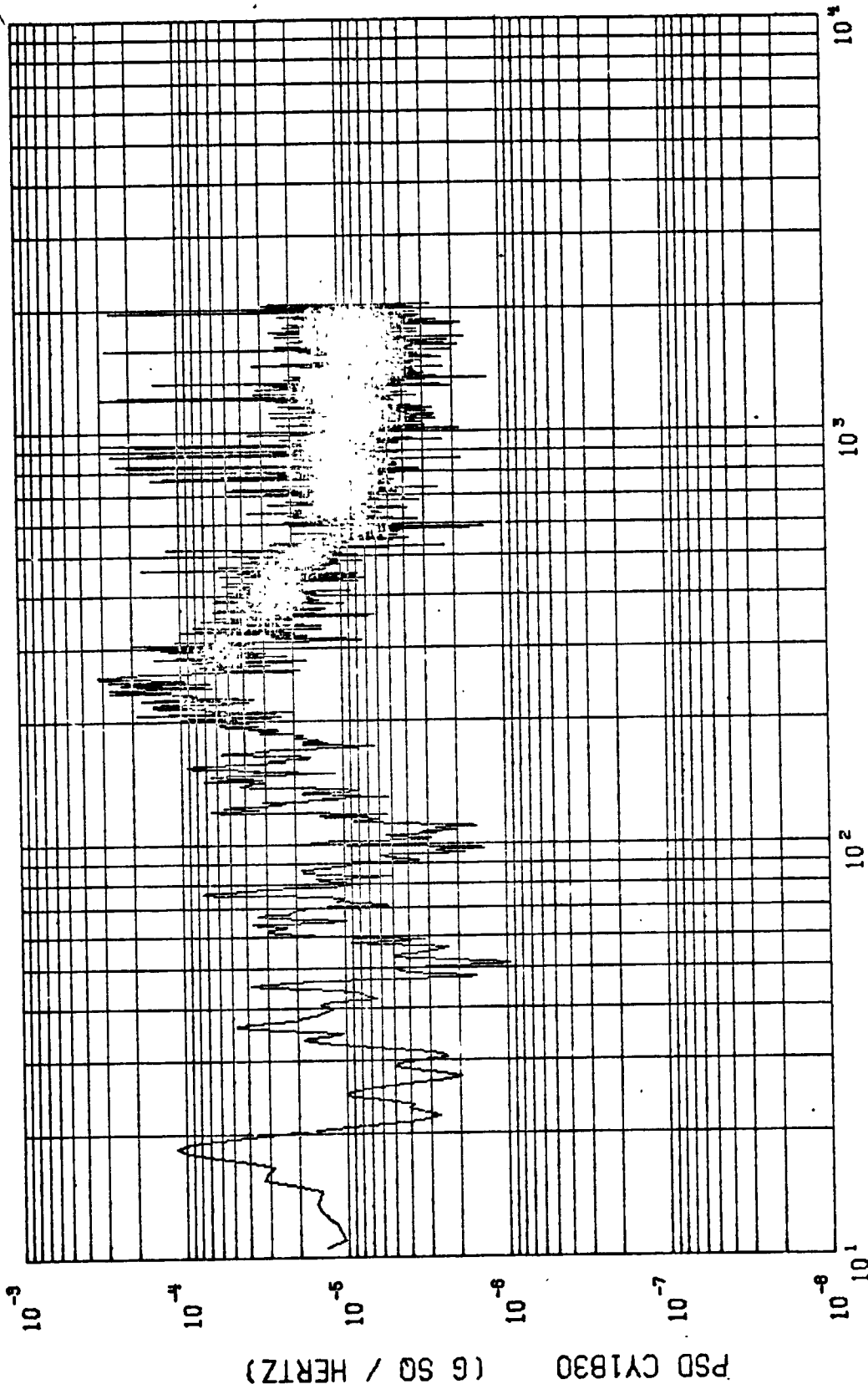
MIN = -1.041

VIKING B FLT (CIF)

STAGE 0 IGN - 2

CY1830

# POWER SPECTRAL DENSITY

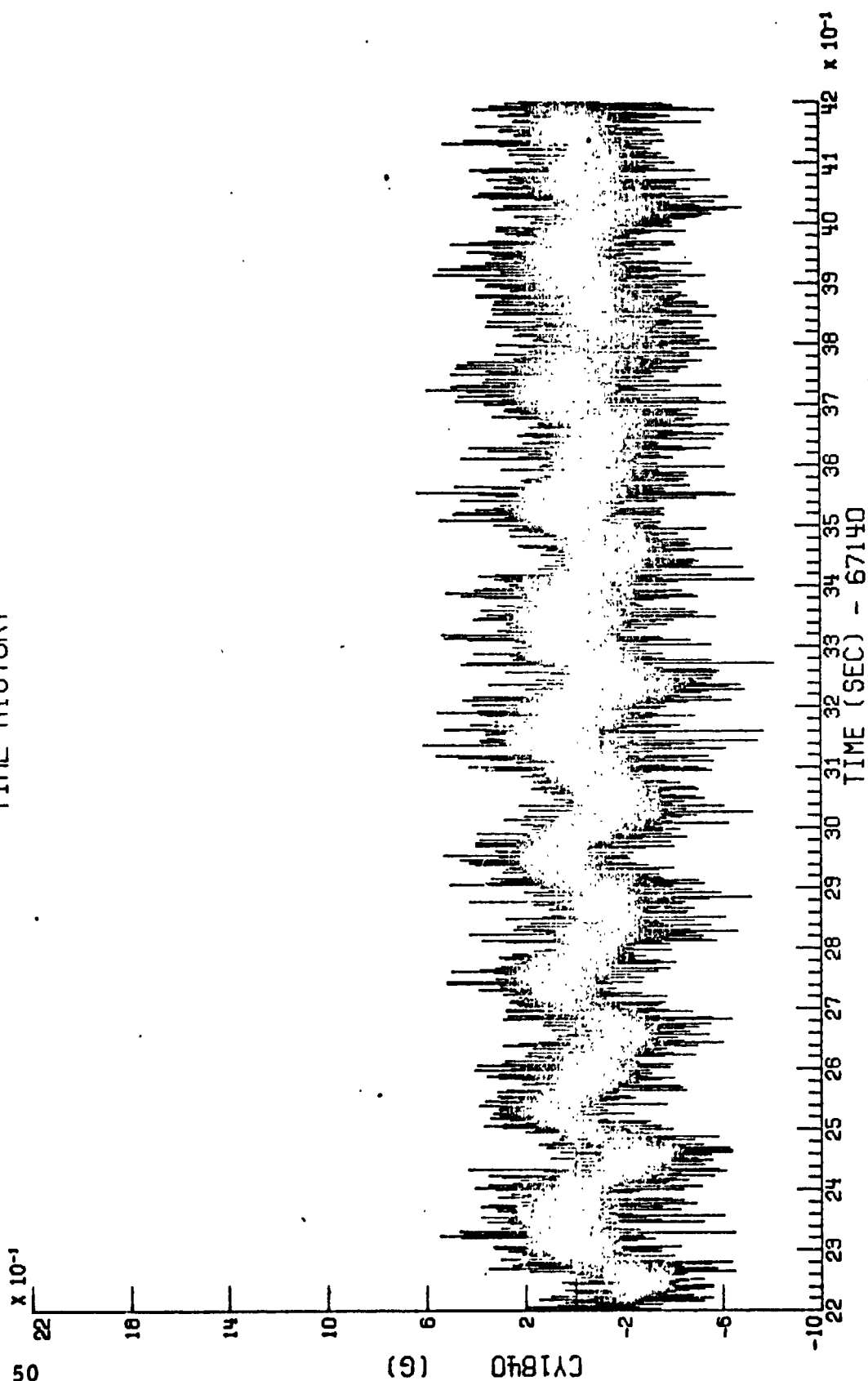


$\Delta F = .499$   
 $MEAN = -14752 \times 10^{-5}$      $\sigma^2 = 4388 \times 10^{-5}$      $\sigma = 20947 \times 10^{-5}$      $3\sigma = 62843 \times 10^{-5}$   
 $START = 67142.200 \text{ SEC}$      $STOP = 67144.199 \text{ SEC}$

VIKING J FLT (CIF)    STAGE 0 IGN - 2    CY1830

Figure 4.23b

# TIME HISTORY



MAX = .628

MIN = -.811

VIKING B FLT (CIF)

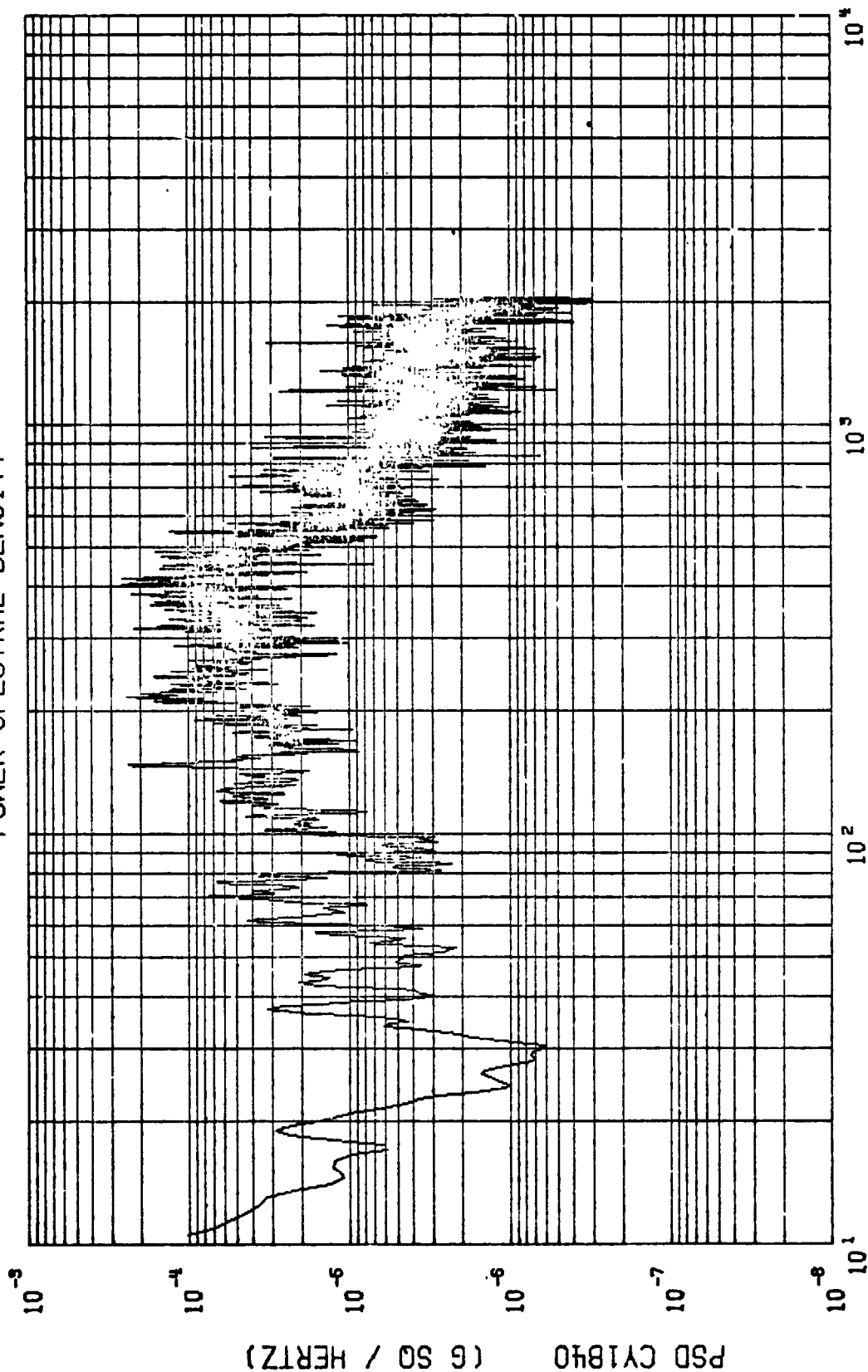
STAGE 0 IGN - 2

CY1840

4096 SFS

Figure 4.24a

# POWER SPECTRAL DENSITY



$\Delta F = .499$

START =  $67142.200 \text{ SEC}$

STOP =  $67144.199 \text{ SEC}$

MEAN =  $-78874 \times 10^{-6}$

$\sigma^2 = 43415 \times 10^{-6}$

$\sigma = 20836 \times 10^{-3}$

$3\sigma = 62509 \times 10^{-3}$

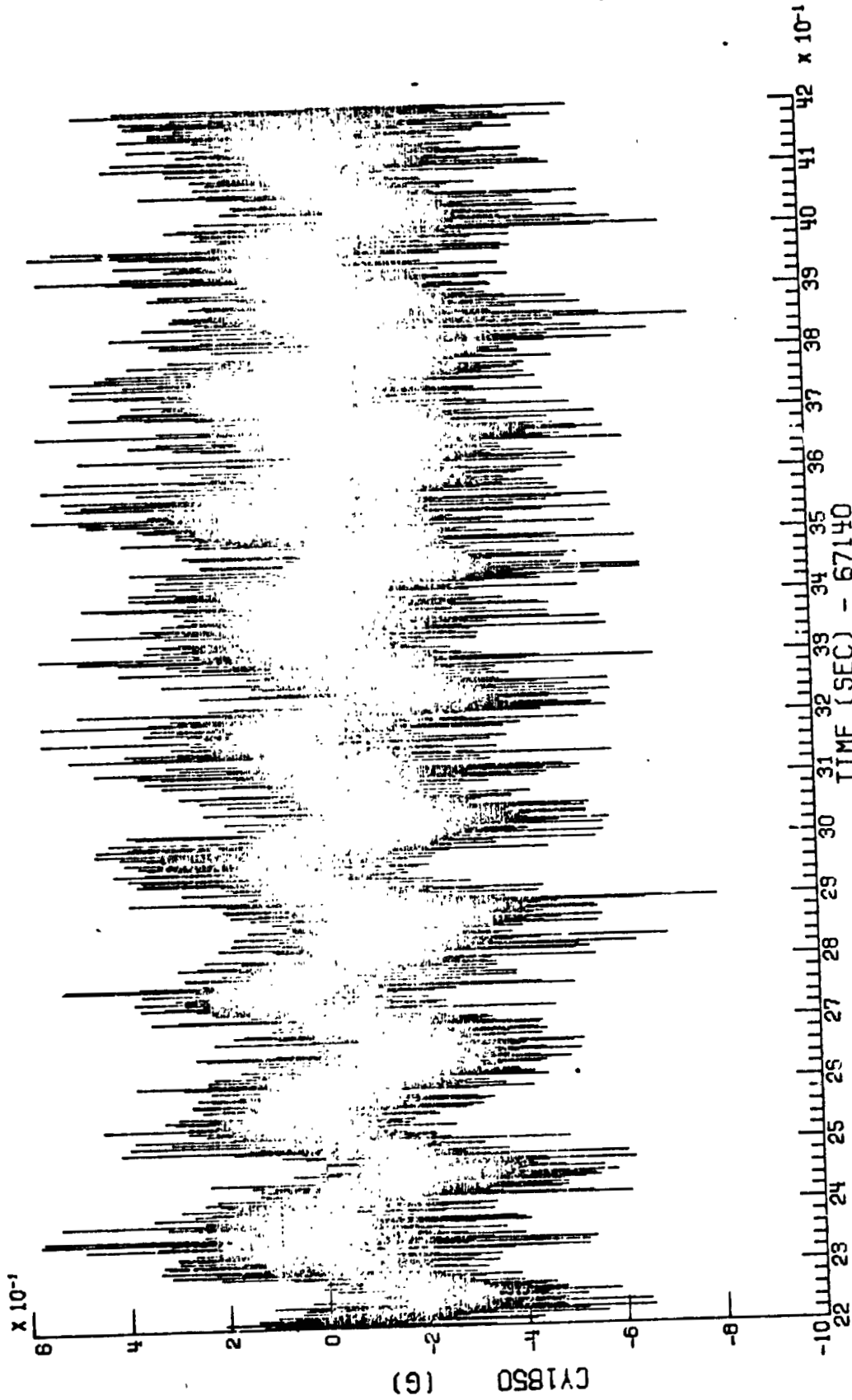
VIKING B FLT (CIF)

STAGE 0 IGN - 2

CY1840

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OF POOR QUALITY

TIME HISTORY



MIN = -.795

MAX = .578

CY1850

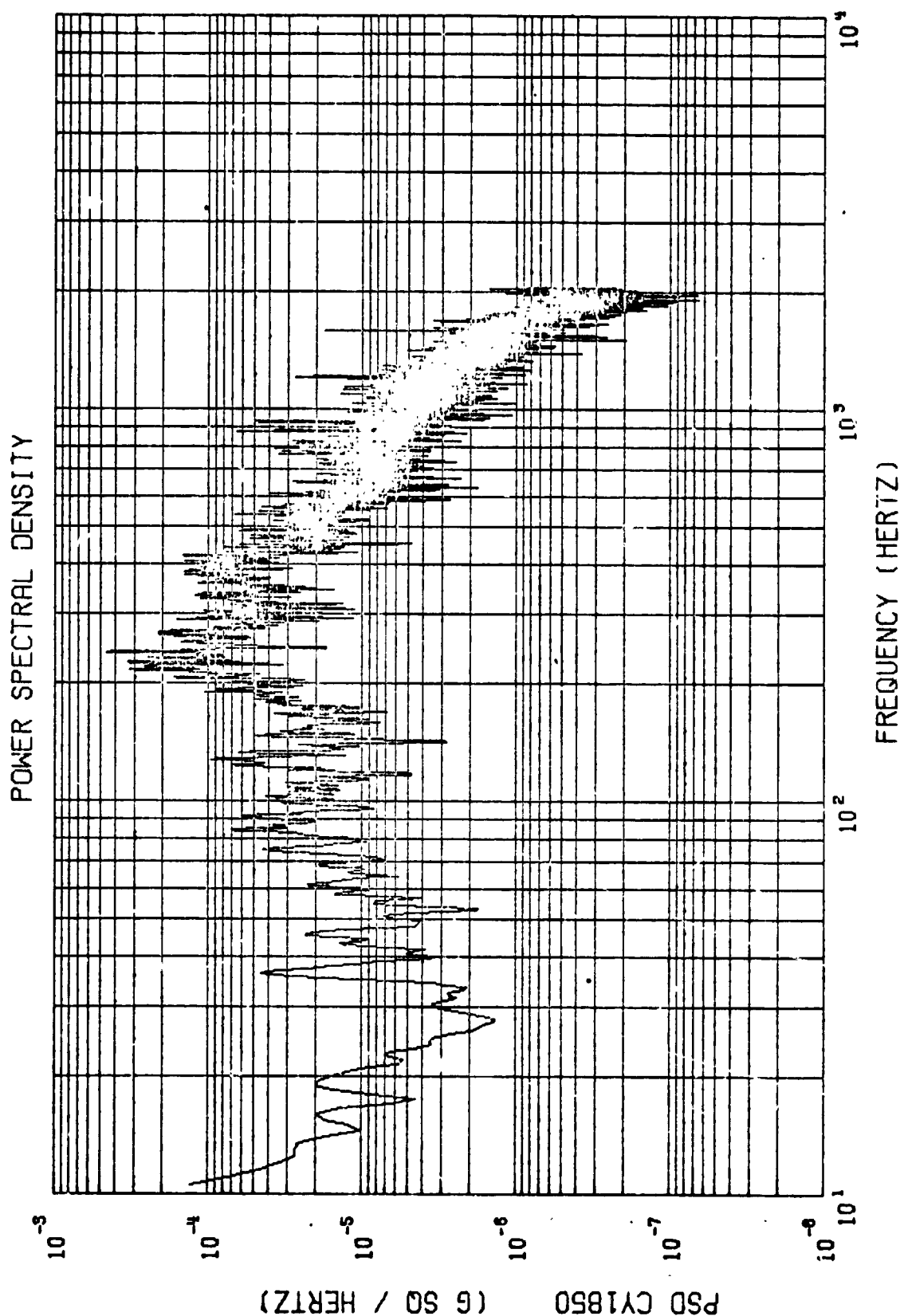
STAGE 0 IGN - 2

4096 SPS

VIKING B FLT (CIF)

NFSA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.25a



$\Delta F = .439$       START = 67142.200 SFC      STOP = 67144.199 SEC  
 MEAN =  $-7614 \times 10^{-5}$        $\sigma^2 = 40437 \times 10^{-5}$        $\sigma = 20109 \times 10^{-5}$        $3\sigma = 60327 \times 10^{-5}$

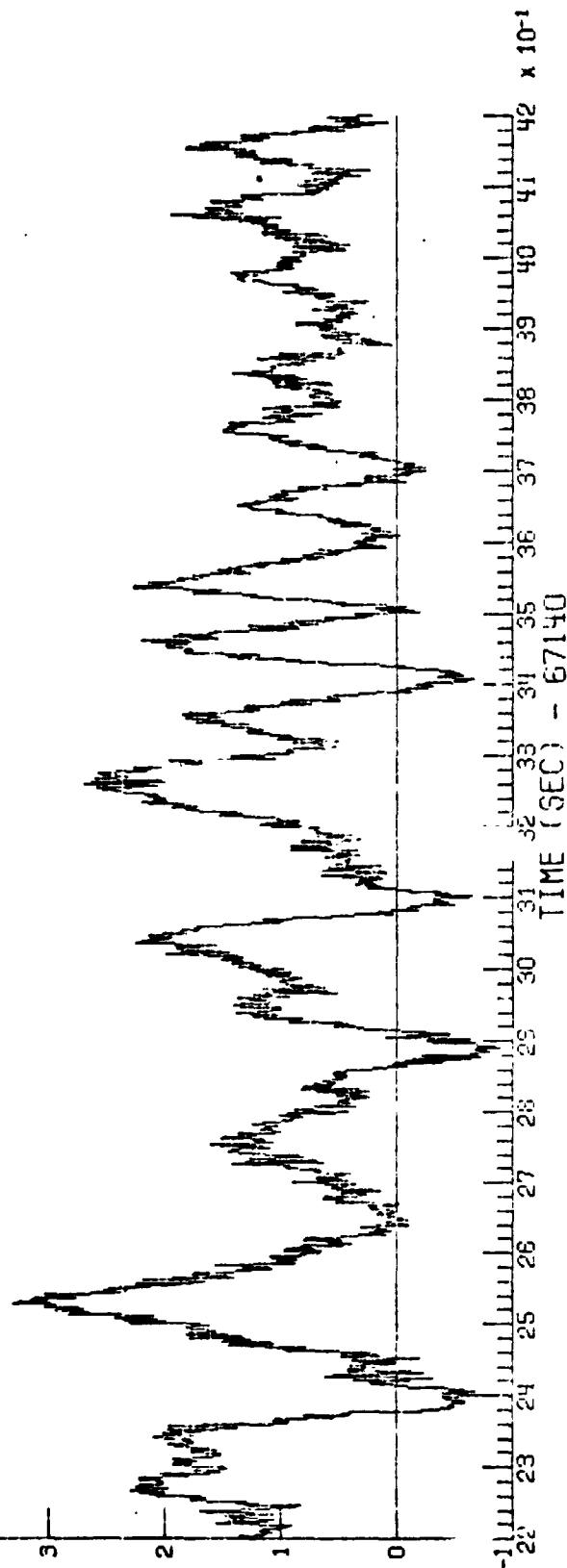
# TIME HISTORY

$\times 10^{-1}$

54

(9)

700X



MAX = .330

MIN = -.089

VIKING B FLT (CIF)

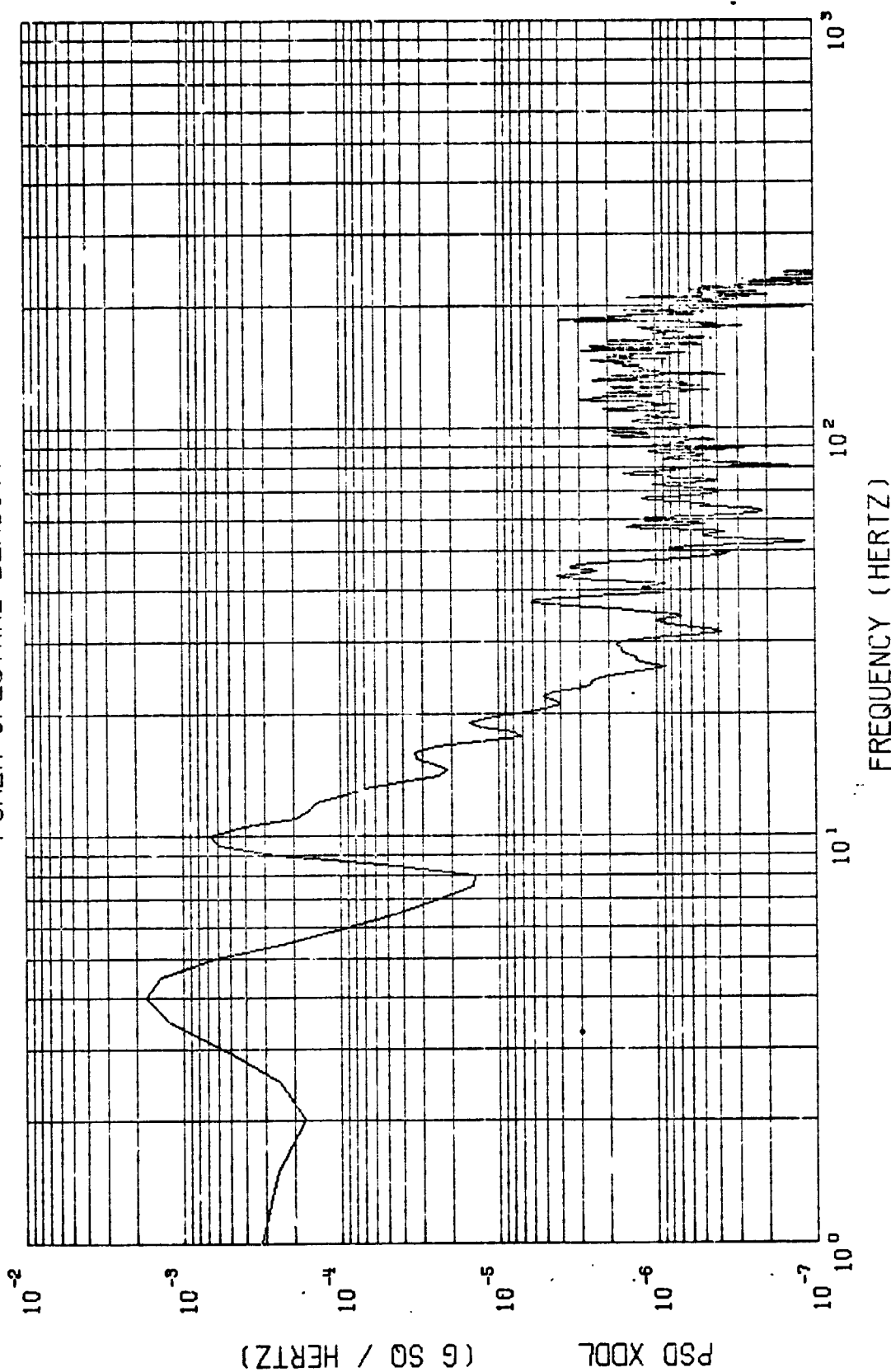
STRGE 0 16N - 2

XDDI

Figure 4.26a

NASO-LEWISLEY SIGMA ANALYSIS PROGRAM 08/24/75

# POWER SPECTRAL DENSITY



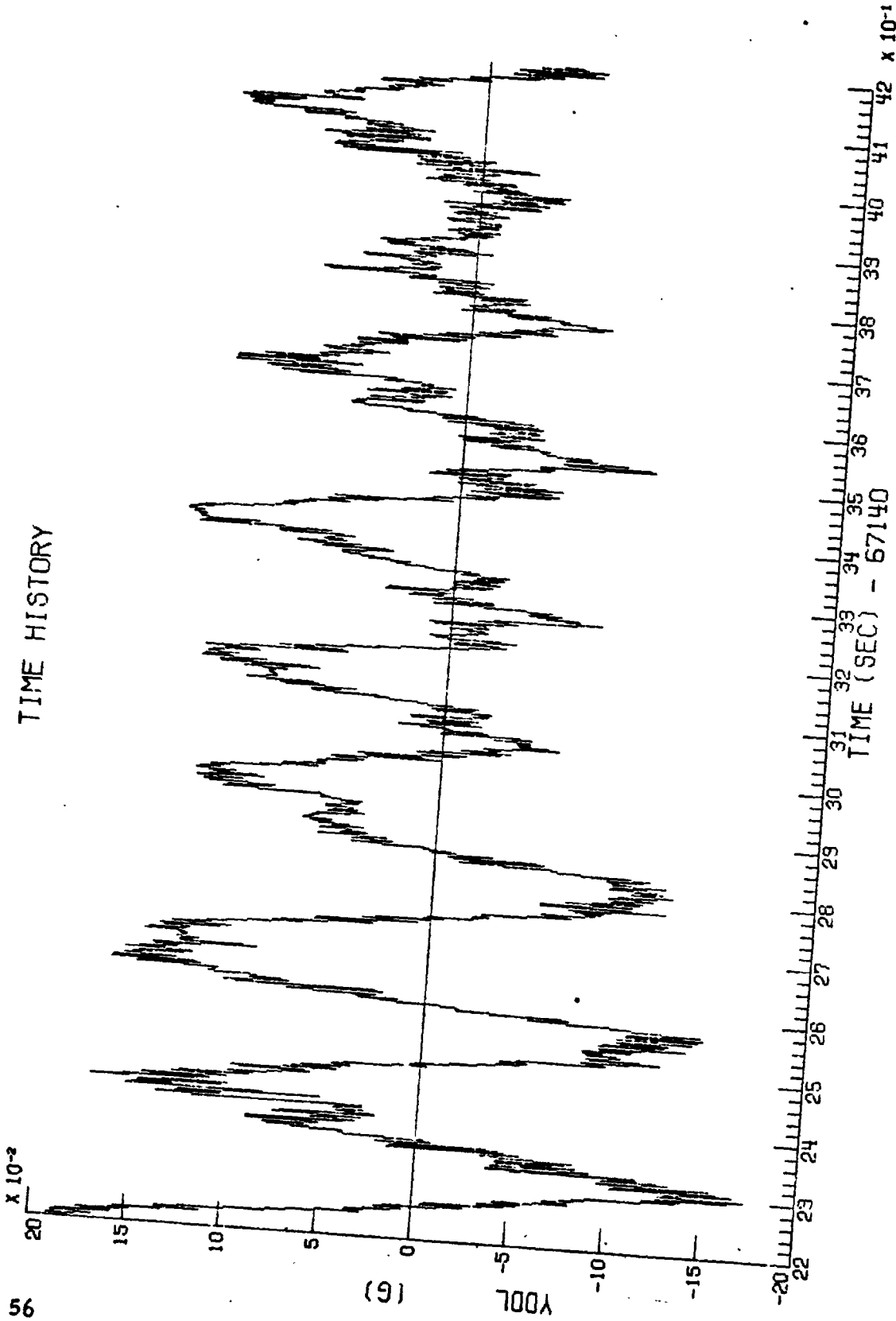
$\Delta F = .500$   
 $\text{MEAN} = 91875 \times 10^{-5}$      $\sigma^2 = 53359 \times 10^{-7}$      $\sigma = 73047 \times 10^{-5}$      $3\sigma = 21914 \times 10^{-5}$   
 $\text{START} = 67142.200 \text{ SEC}$      $\text{STOP} = 67144.199 \text{ SEC}$

VIKING B FLT (CIF)    STAGE 0 IGN - 2    XDDL

Figure 4.26b



# TIME HISTORY



MAX = .190

MIN = -.173

VIKING B FLT (CIF)

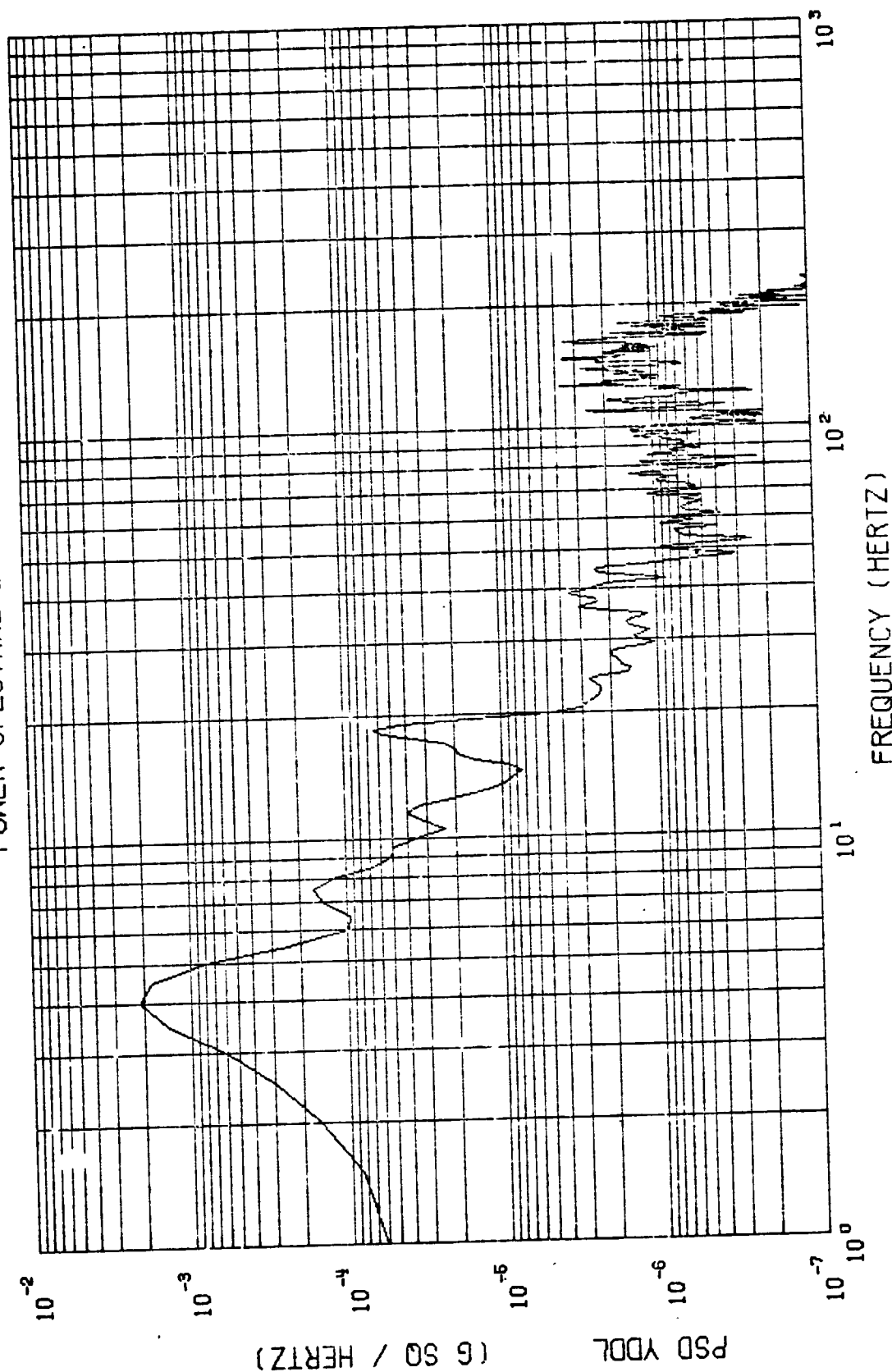
STAGE 0 IGN - 2

YDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.27a

# POWER SPECTRAL DENSITY



$\Delta F = .500$

START = 67142.200 SEC

STOP = 67144.199 SEC

MEAN =  $20008 \times 10^{-5}$

$\sigma^2 = 46931 \times 10^{-7}$

$\sigma = 68506 \times 10^{-6}$

$3\sigma = 20552 \times 10^{-6}$

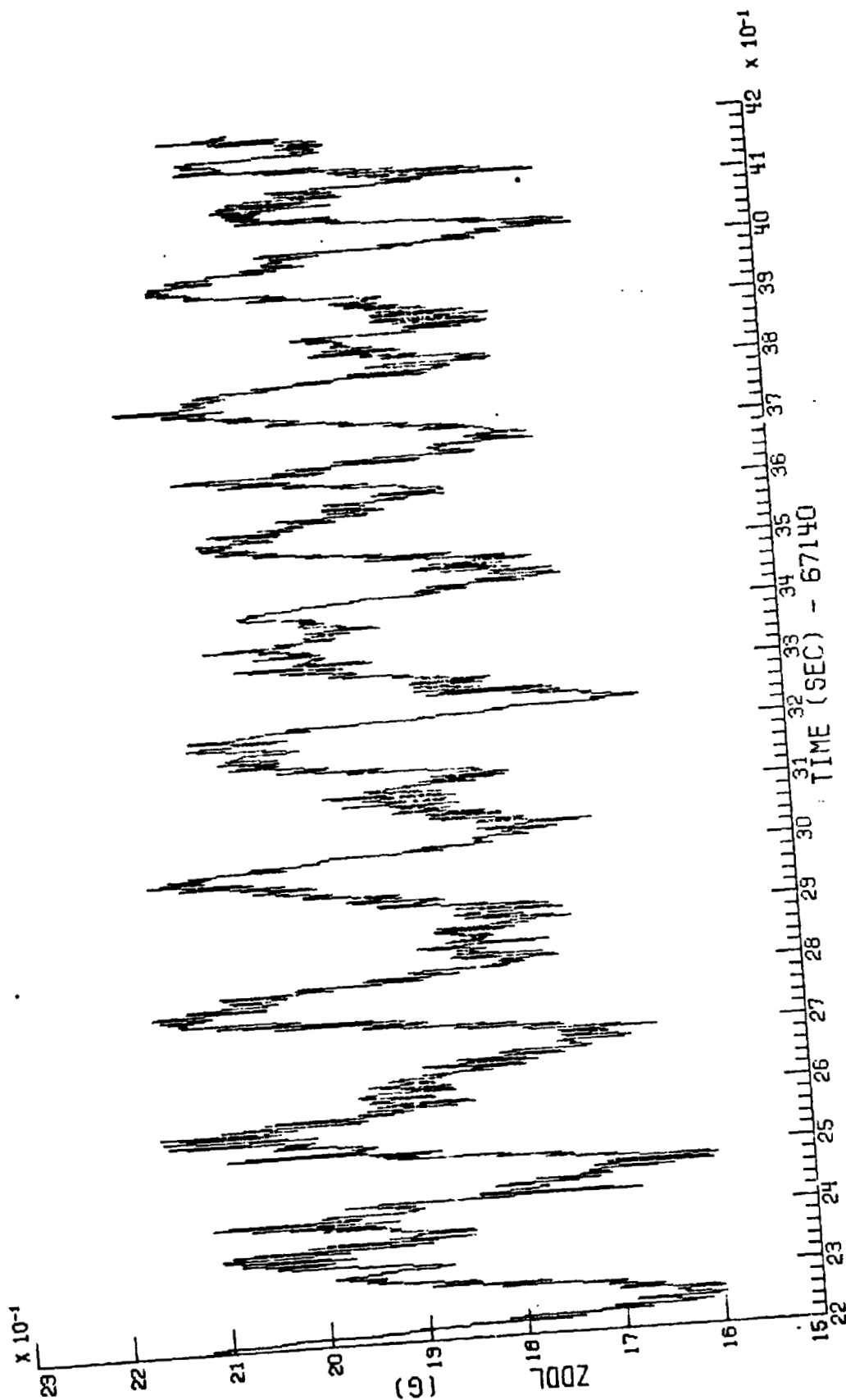
VIKING B FLT (CIF)

STAGE 0 IGN - 2

YDDL

Figure 4.27b

# TIME HISTORY



MIN = 1.597

MAX = 2.159

ZDDL

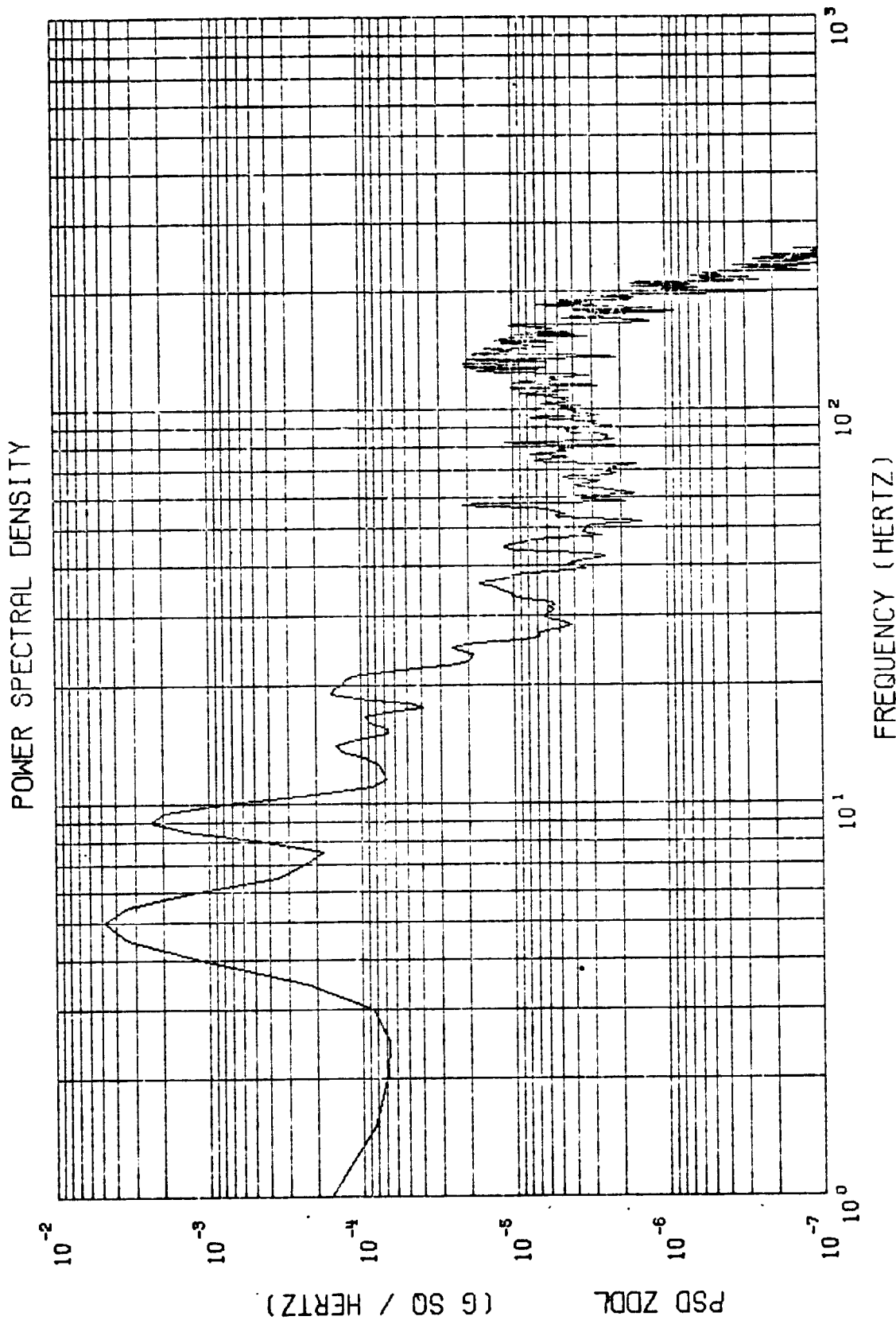
STAGE 0 IGN - 2

Figure 4.28a

VIKING B FLT (CIF)

09/23/75

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM



$\Delta F = .500$   
 $MEAN = 19095 \times 10^{-4}$      $\sigma^2 = 13701 \times 10^{-6}$      $\sigma = 11705 \times 10^{-5}$      $3\sigma = 35116 \times 10^{-5}$   
 $START = 67142.200 \text{ SEC}$      $STOP = 67144.199 \text{ SEC}$

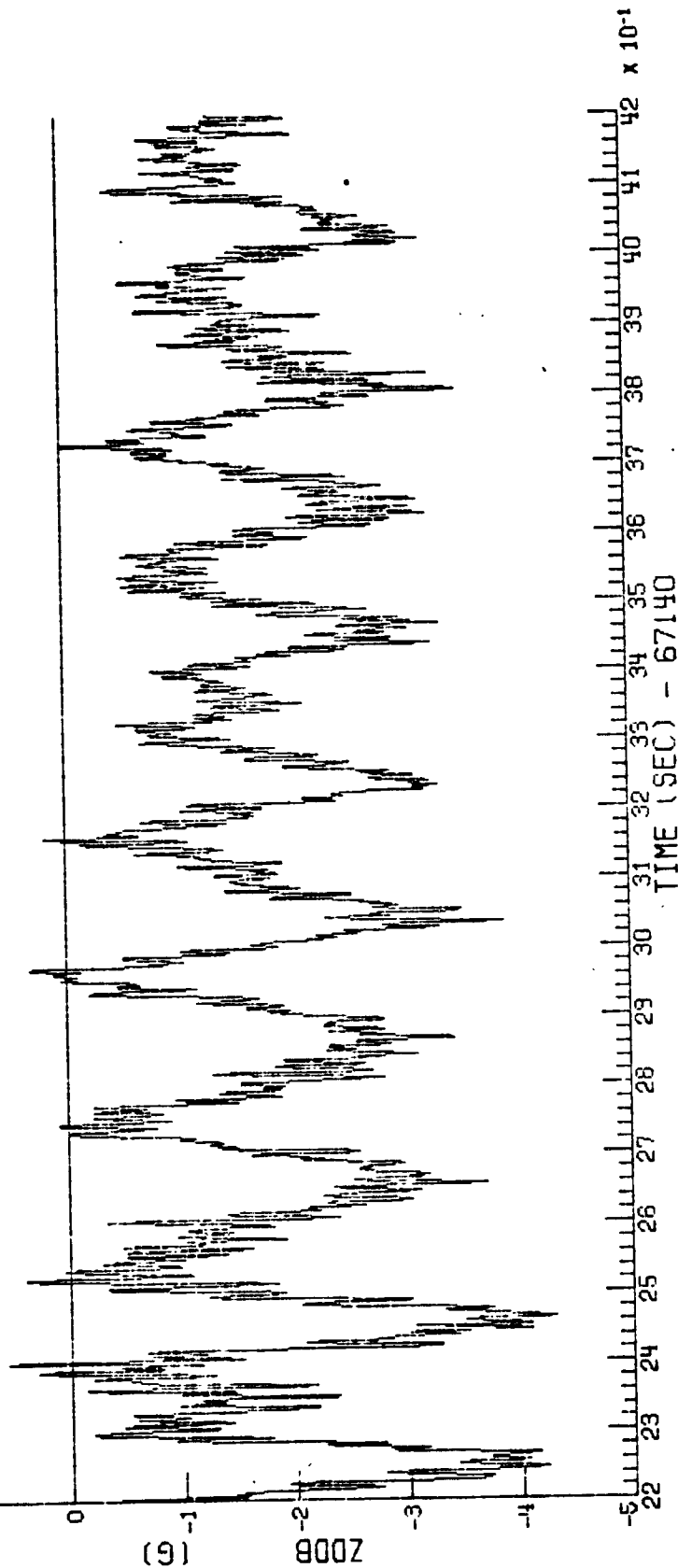
VIKING B FLT (CIF)    STAGE 0 16N - 2    ZDOL

Figure 4.28b

# TIME HISTORY

$\times 10^{-1}$

60



MAX = .055

MIN = -.431

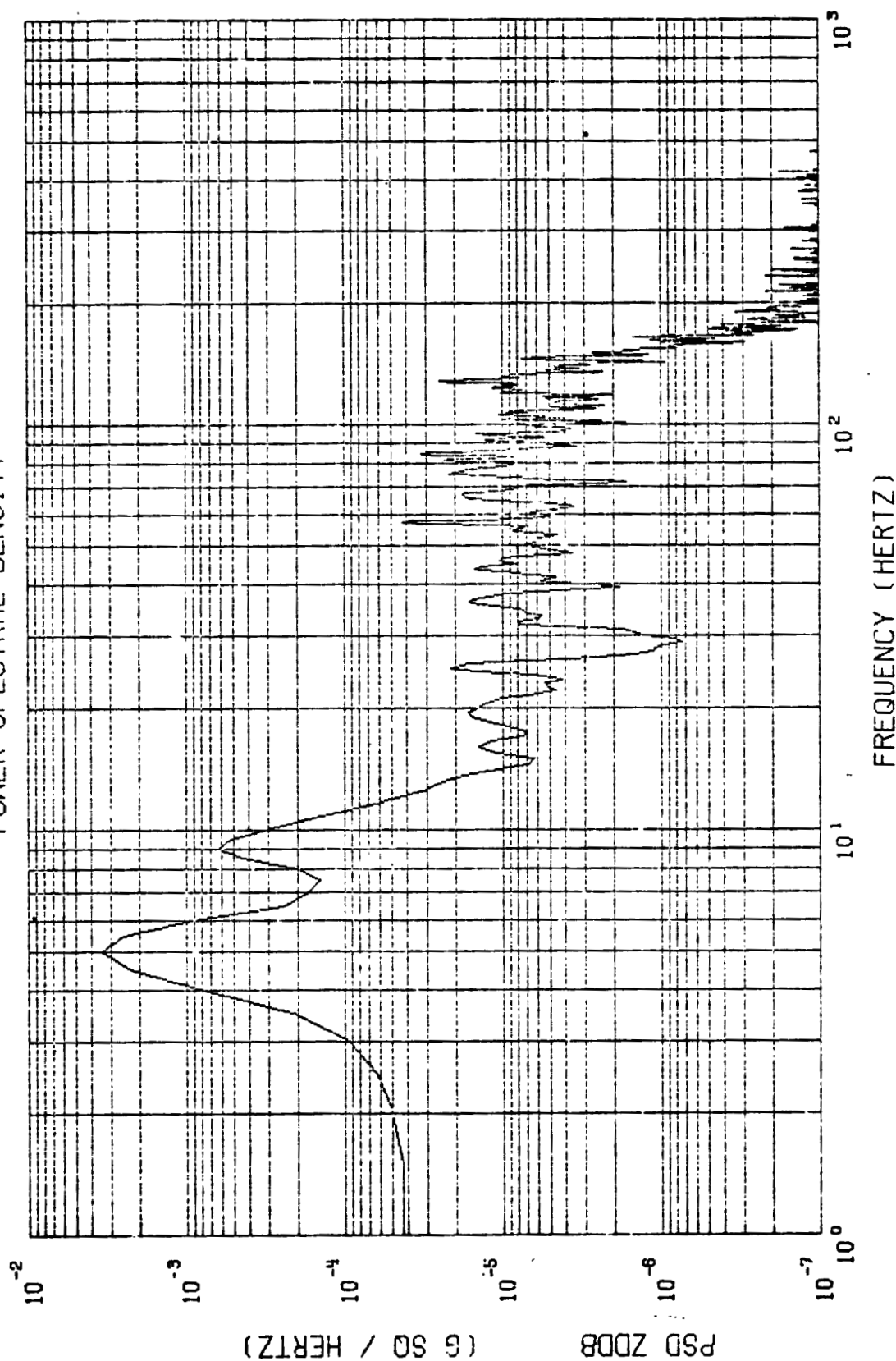
VIKING B FLI (CIF)

STAGE 0 IGN - 2

Z008

Figure 4.29a

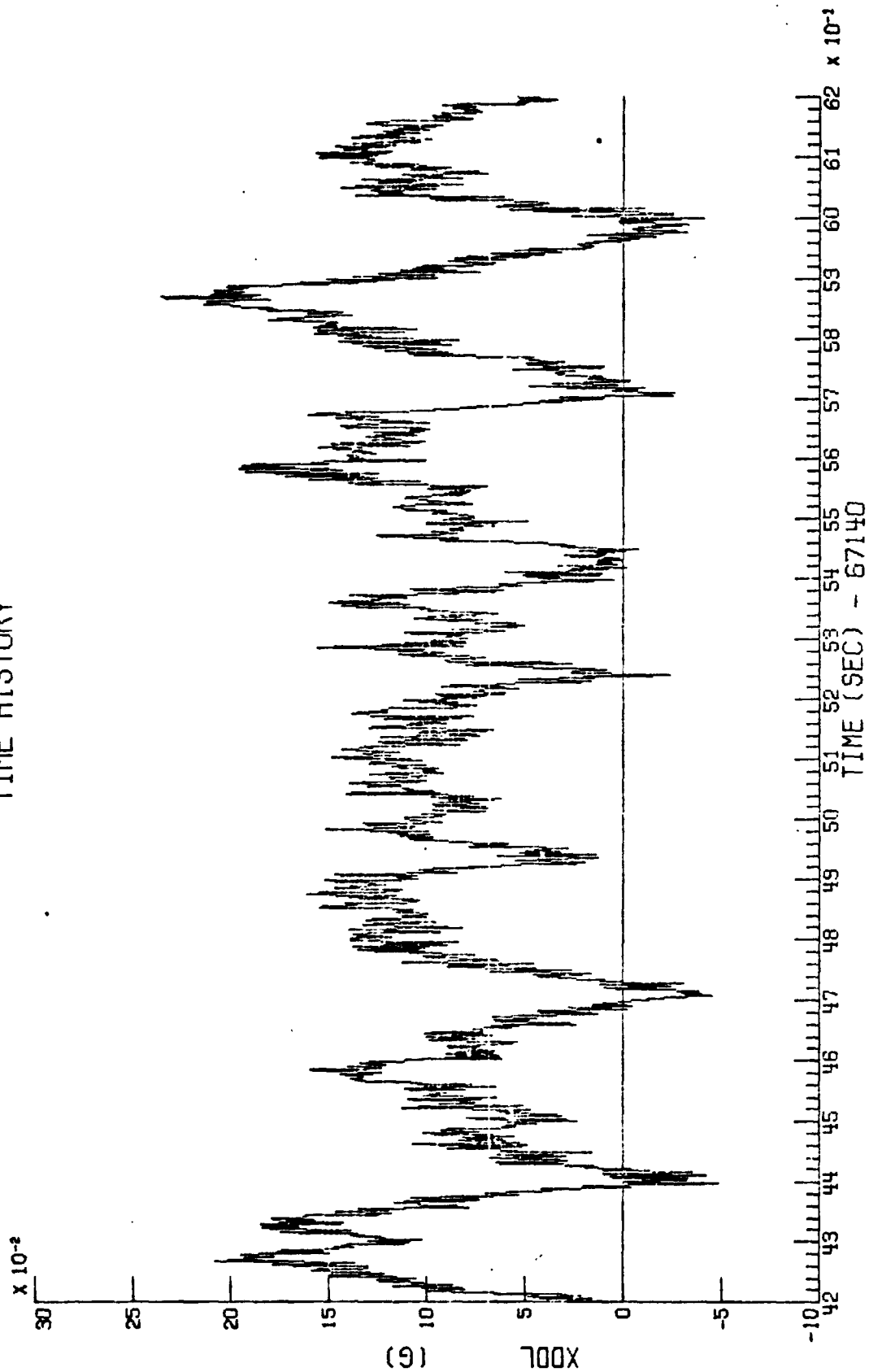
# POWER SPECTRAL DENSITY



$\Delta F = .500$   
 $MEAN = -17324 \times 10^{-5}$      $\sigma^2 = 80122 \times 10^{-7}$      $\sigma = 89511 \times 10^{-5}$      $3\sigma = 26853 \times 10^{-5}$   
 $START = 67142.200 \text{ SEC}$      $STOP = 67144.199 \text{ SEC}$

VIKING B FLI (C1F1)  
 STAGE 0 IGN - 2    ZDD8  
 Figure 4.29b

# TIME HISTORY



MAX = .235

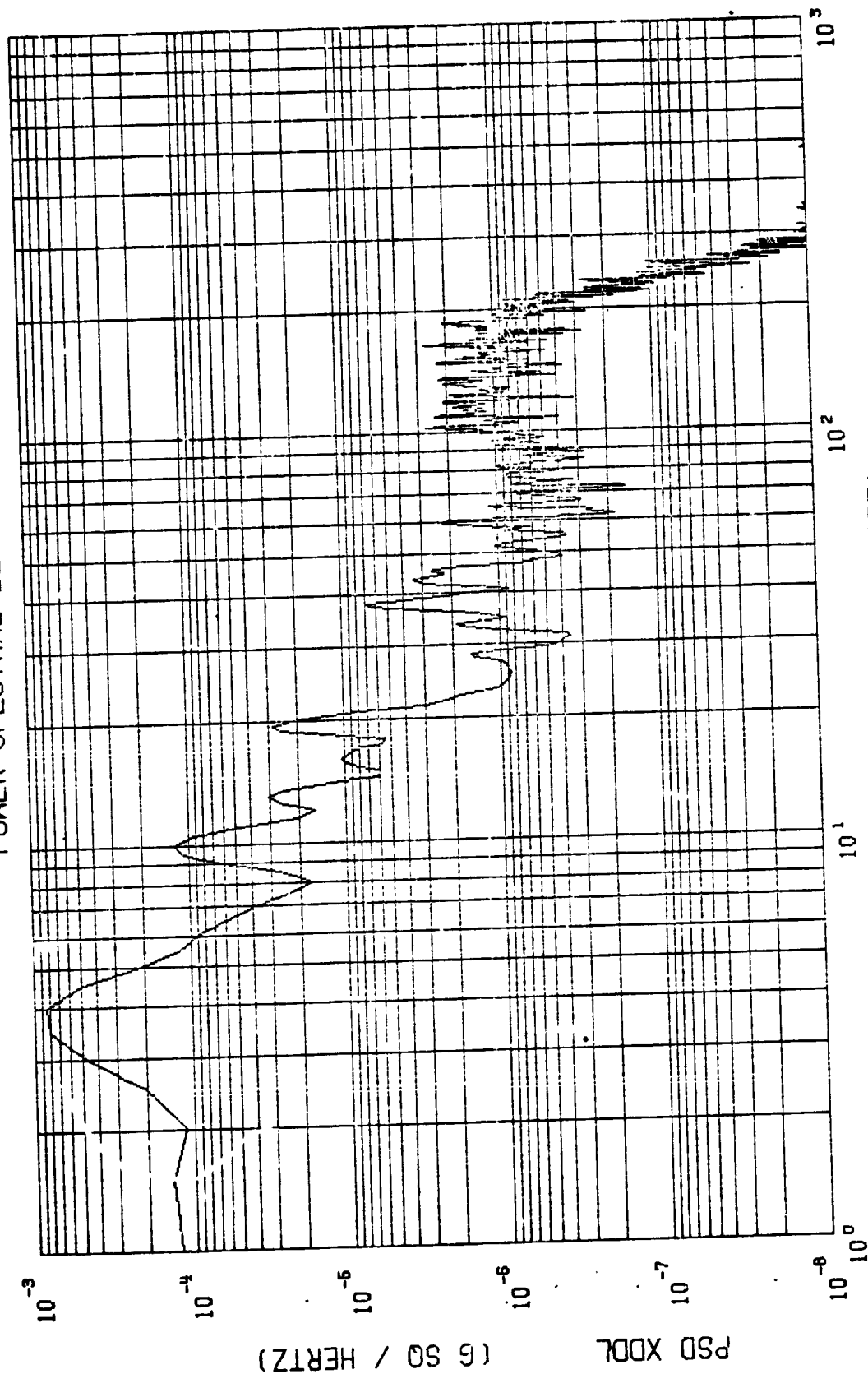
MIN = -.048

VIKING B FLT (CIF)

STAGE 0 IGN - 3

XDDL

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

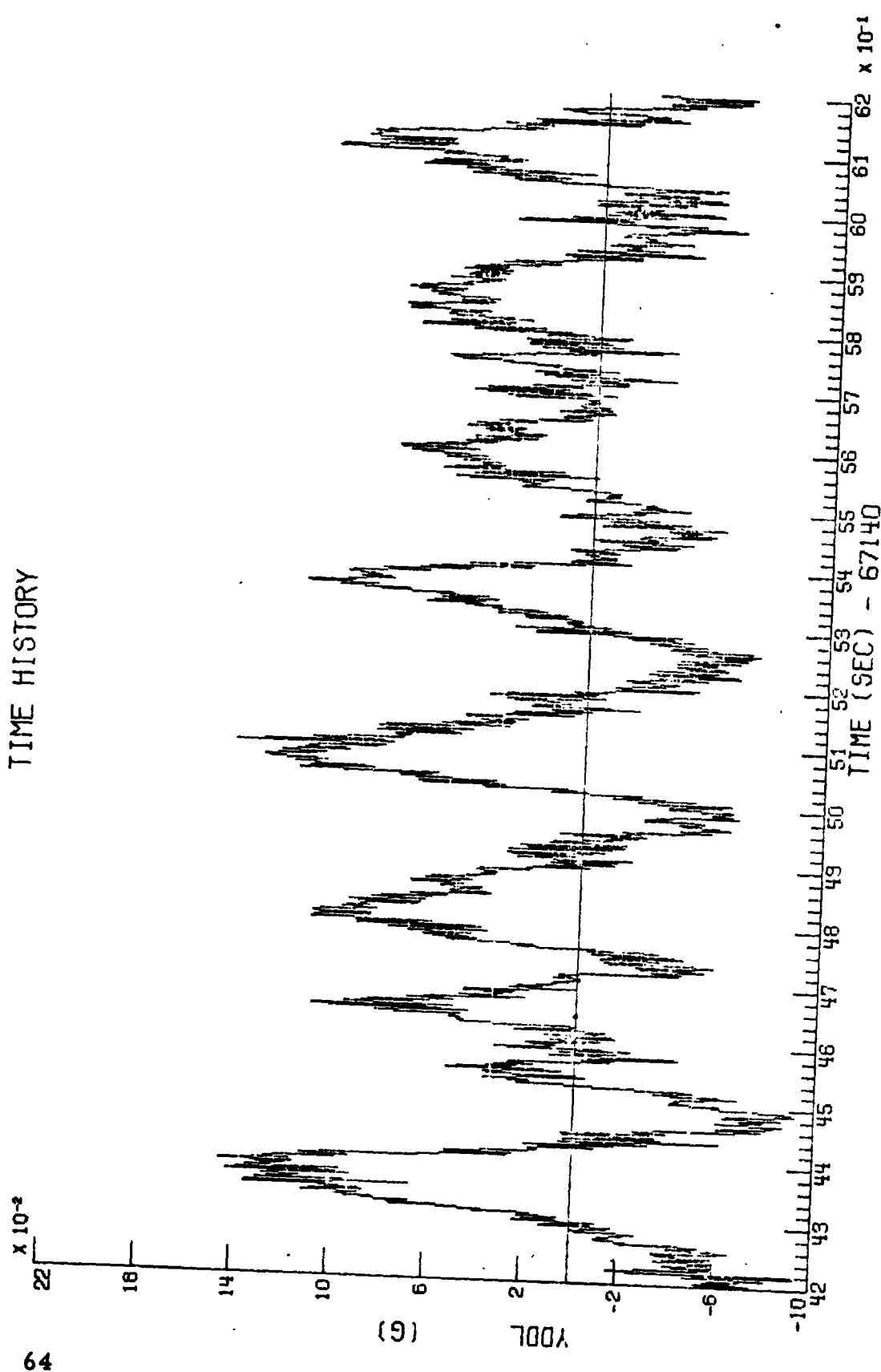
$\Delta F = .500$   
 $MEAN = 87939 \times 10^{-6}$      $\sigma^2 = 25146 \times 10^{-7}$      $\sigma = 50146 \times 10^{-6}$      $3\sigma = 15044 \times 10^{-6}$   
 $START = 67144.200 \text{ SEC}$      $STOP = 67146.199 \text{ SEC}$

XDDL  
 STAGE 0 IGN - 3  
 Figure 4.30b

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75





VIKING B FLT (CIF)

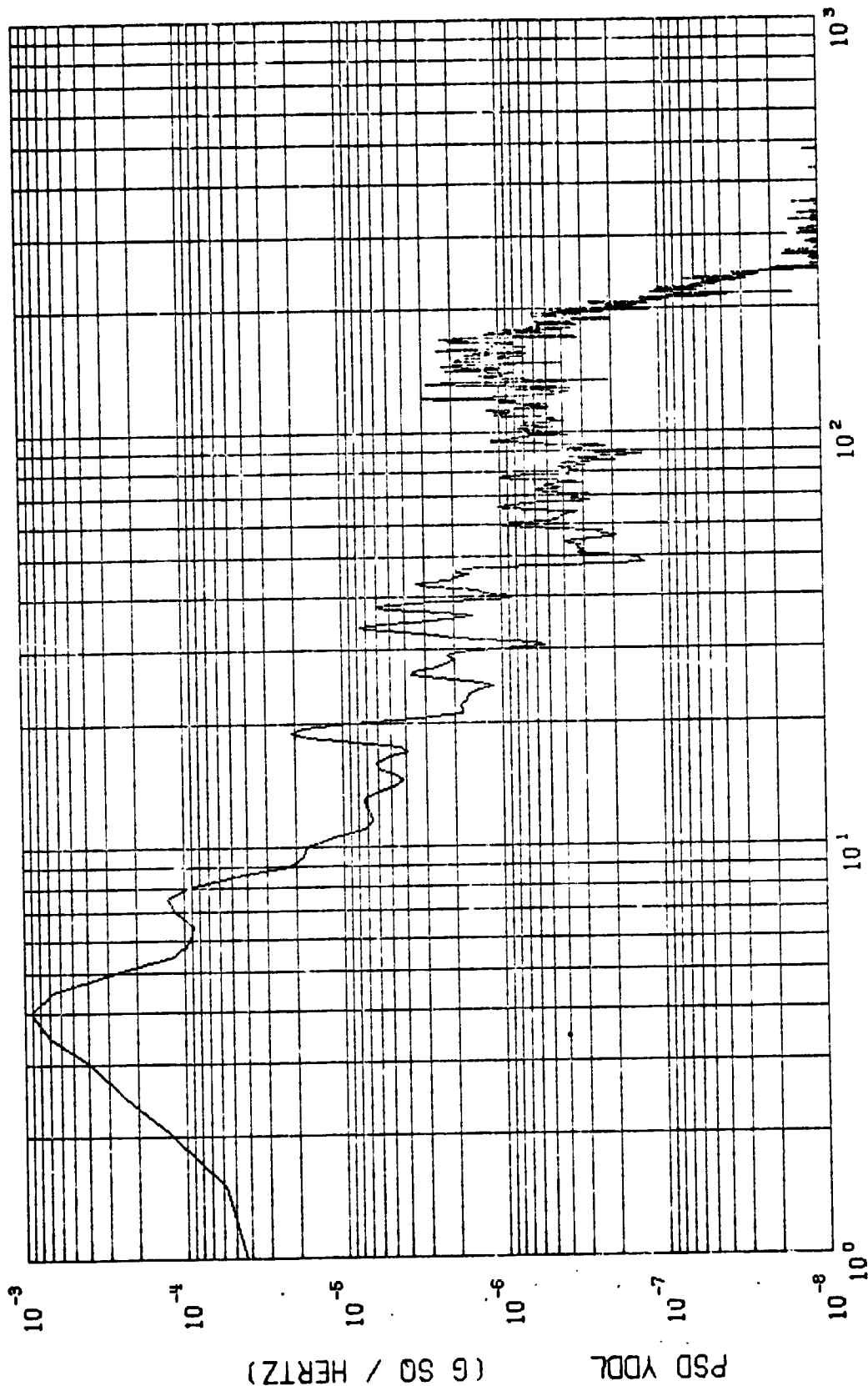
STAGE 0 IGN - 3

YDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.31a

# POWER SPECTRAL DENSITY



$\Delta F = .500$   
 $MEAN = 17555 \times 10^{-6}$      $\sigma^2 = 23675 \times 10^{-7}$      $\sigma = 48657 \times 10^{-6}$      $3\sigma = 14597 \times 10^{-5}$   
 $START = 67144.200 \text{ SEC}$      $STOP = 67146.193 \text{ SEC}$

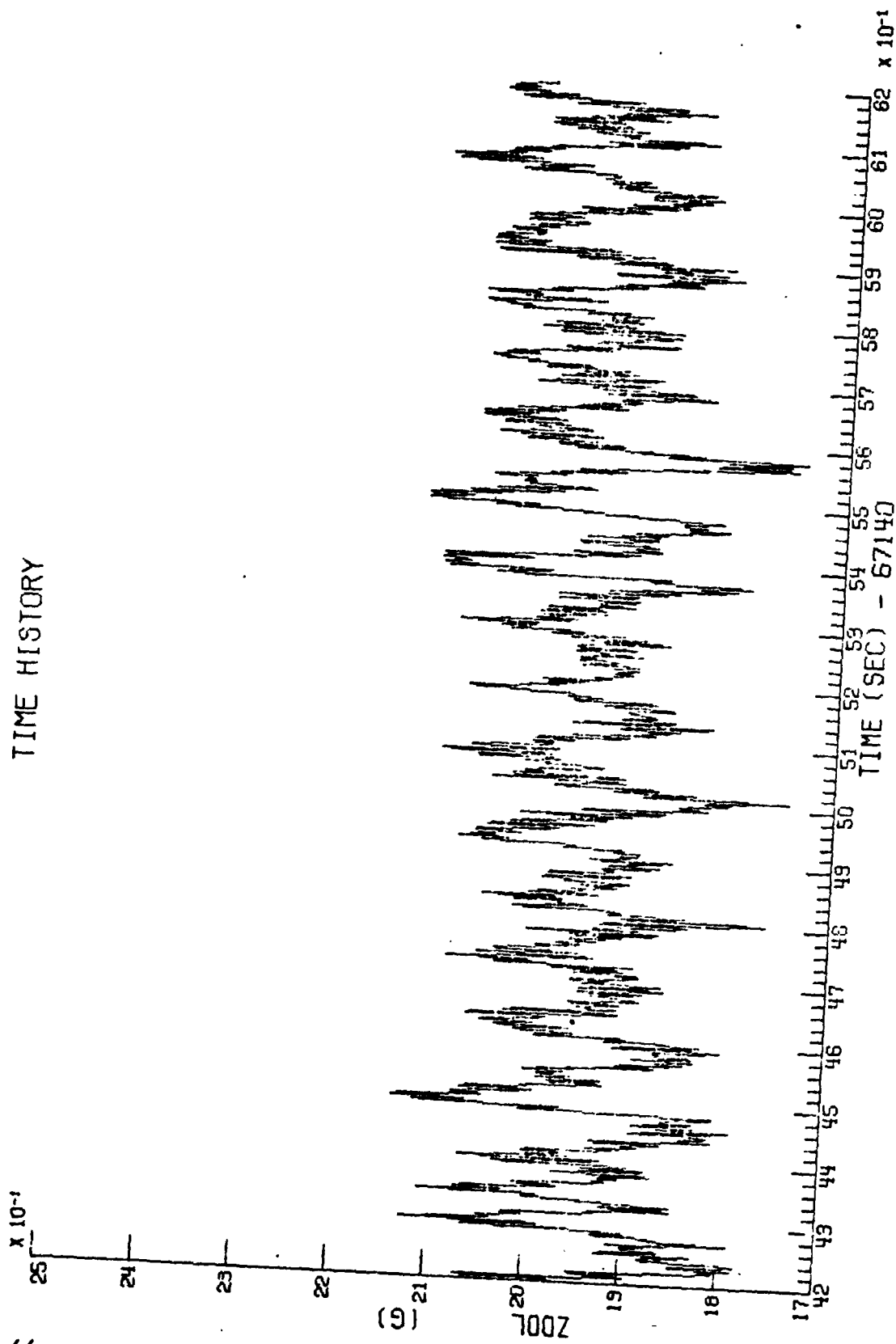
VIKING B FLT (CIF)

STAGE 0 IGN - 3

YDDL

Figure 4.31b

# TIME HISTORY



MAX = 2.139

MIN = 1.742

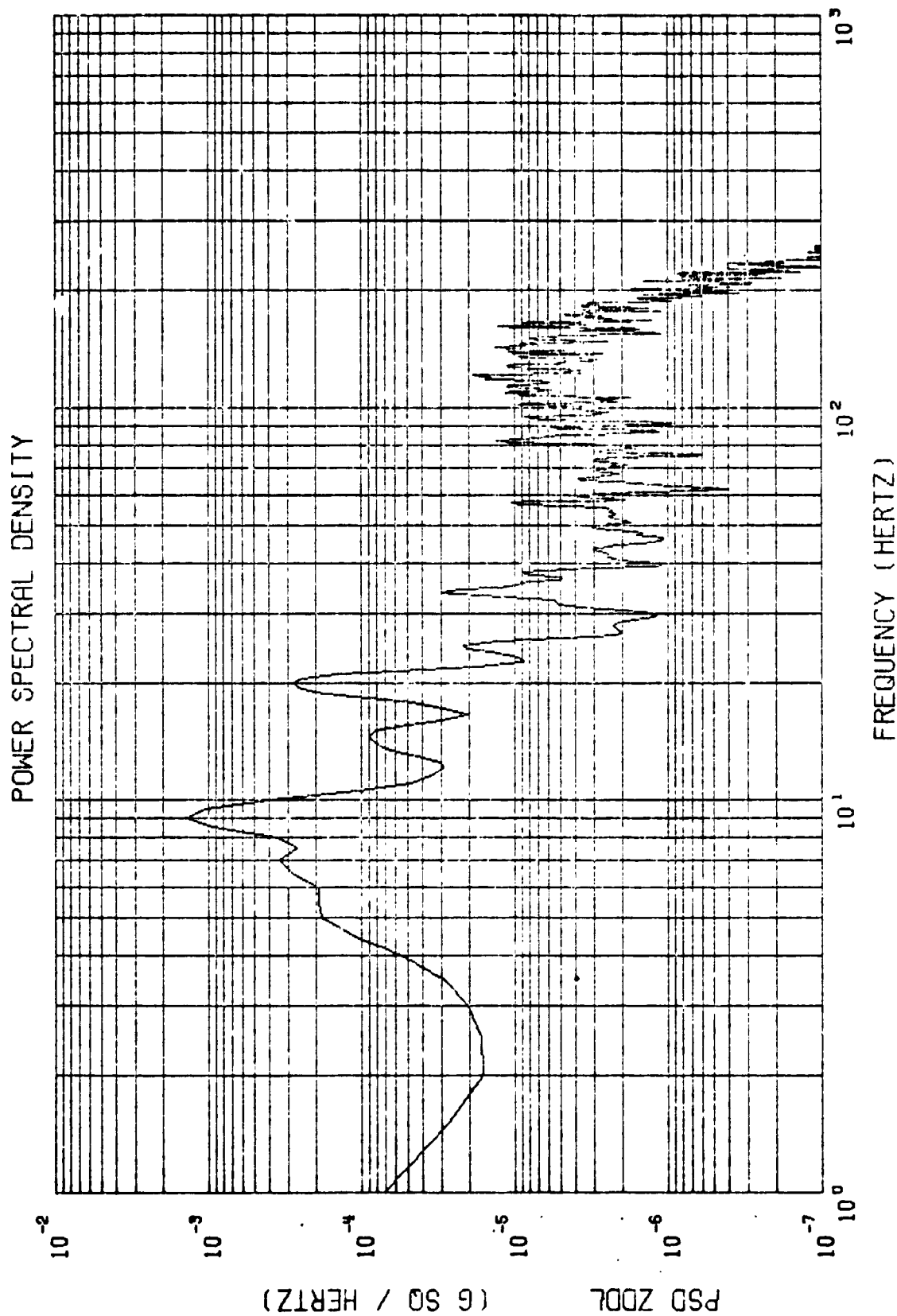
VIKING B FLT (CIF)

STAGE 0 16N - 3

Z00L

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 03/23/75

Figure 4.32a



$\Delta F = .500$       START = 67144.200 SEC      STOP = 67146.199 SEC  
 MEAN =  $19554 \times 10^{-9}$        $\sigma^2 = 50535 \times 10^{-17}$        $\sigma = 71088 \times 10^{-9}$        $3\sigma = 21326 \times 10^{-9}$

VIKING B FLT (CIF)

STAGE 0 IGN - 3

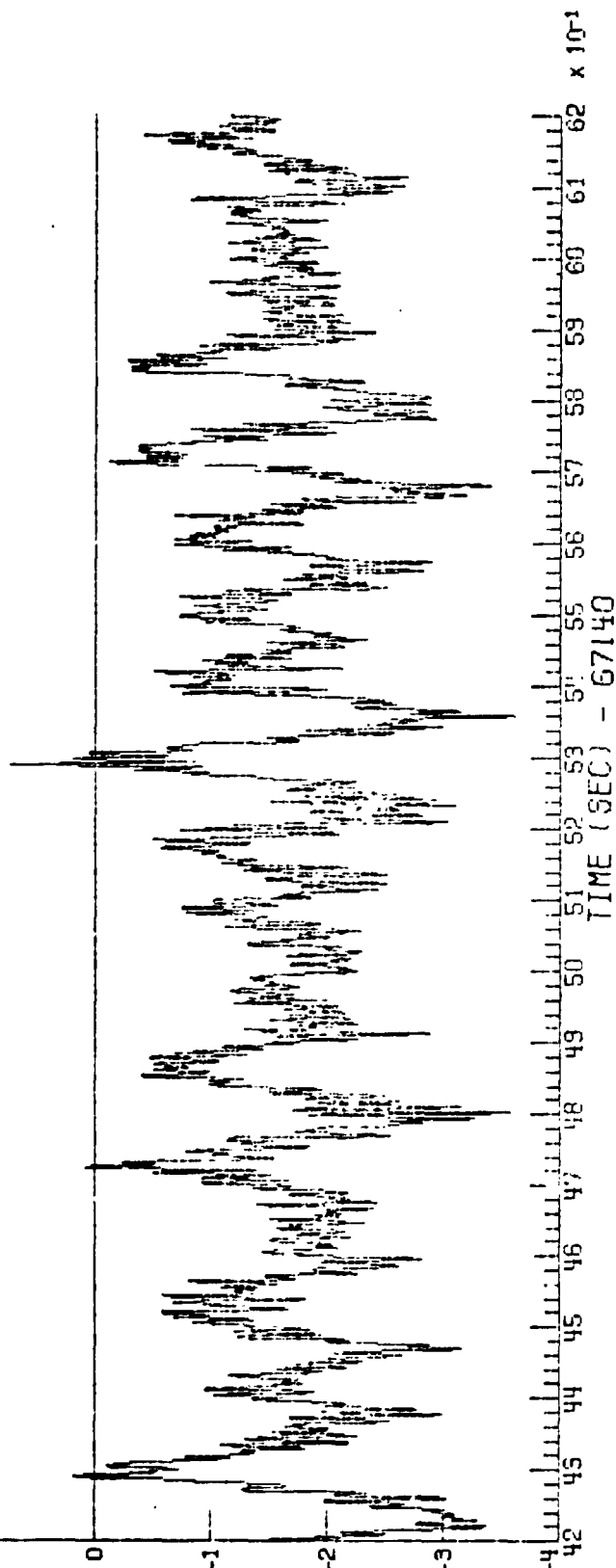
ZDOL

Figure 4.32b

# TIME HISTORY

89  
x 10<sup>-1</sup>

(g) Z008



MAX = .071

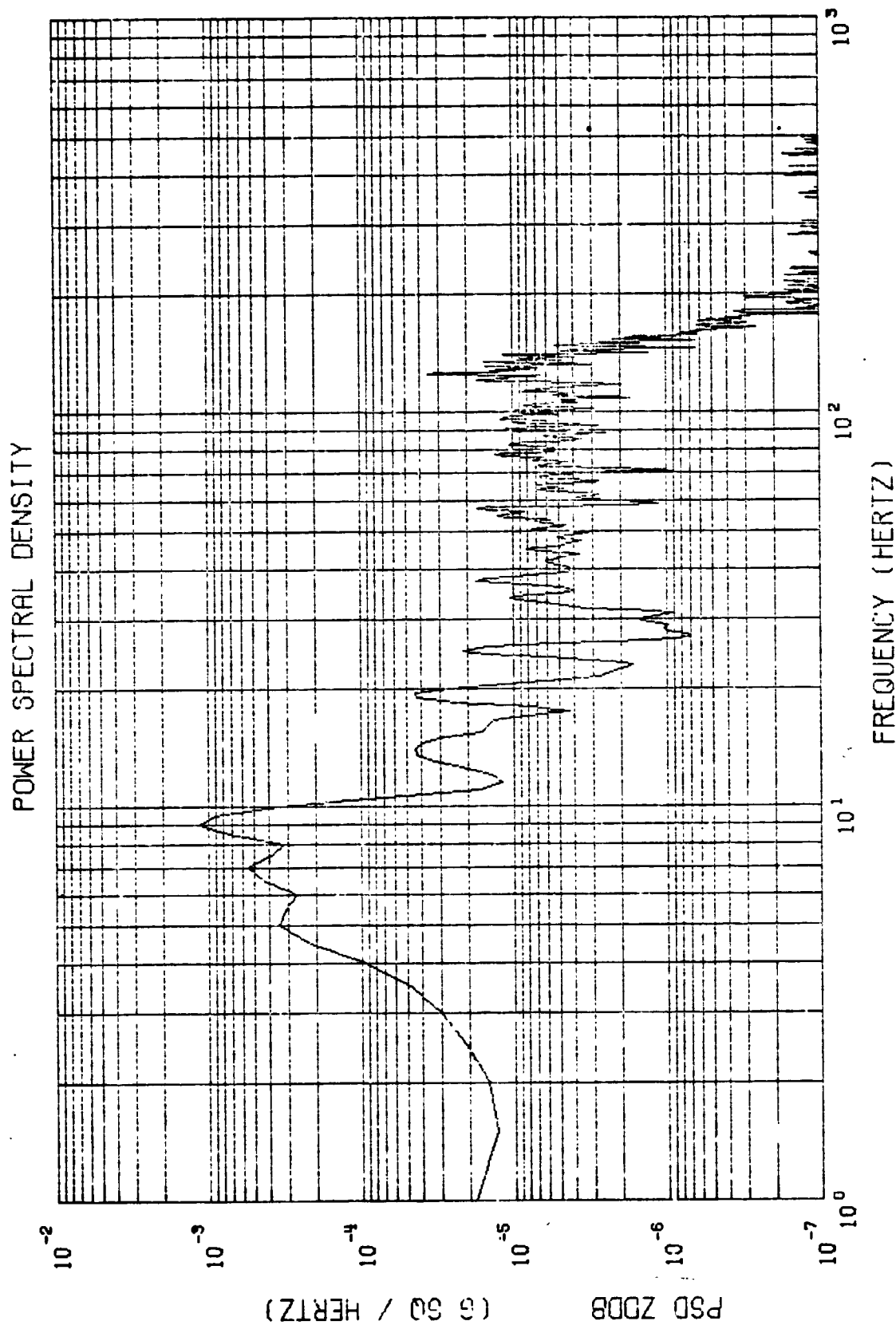
MIN = -.359

VIKING B FLT (CJF)

STAGE 0 IGN - 5

Z008

Figure 4.33a

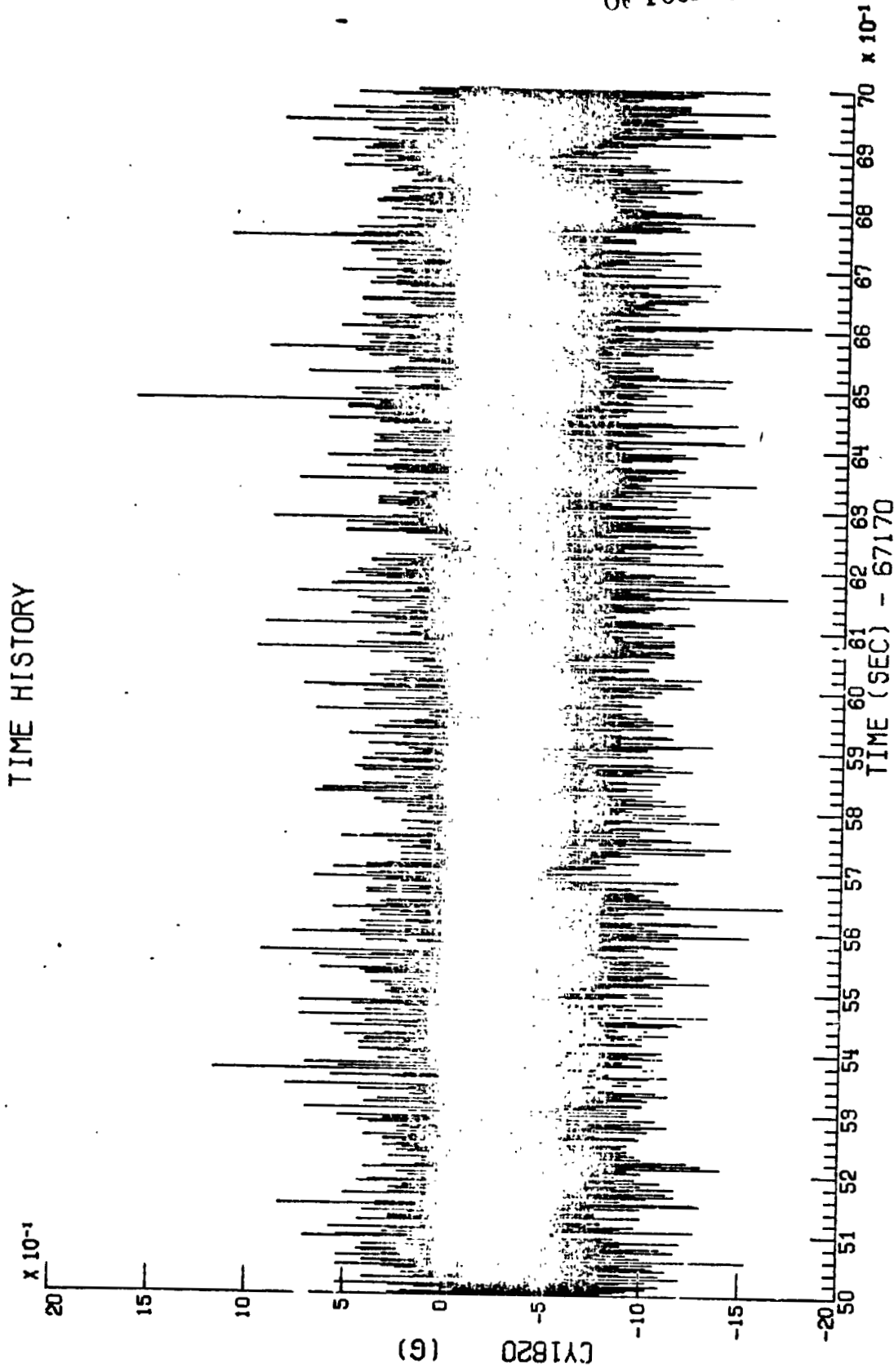


$\Delta F = .500$       START = 67144.200 SEC      STOP = 67146.133 SEC  
 MEAN =  $-18554 \times 10^{-5}$        $\sigma^2 = 42742 \times 10^{-7}$        $\sigma = 65377 \times 10^{-5}$        $3\sigma = 19613 \times 10^{-5}$

VIKING B FLI (C)F)      STAGE D IGN - 3      Z00B

Figure 4.33b

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MAX = 1.600

MIN = -1.801

VIKING B FLT (CIF)

MAX Q - 1

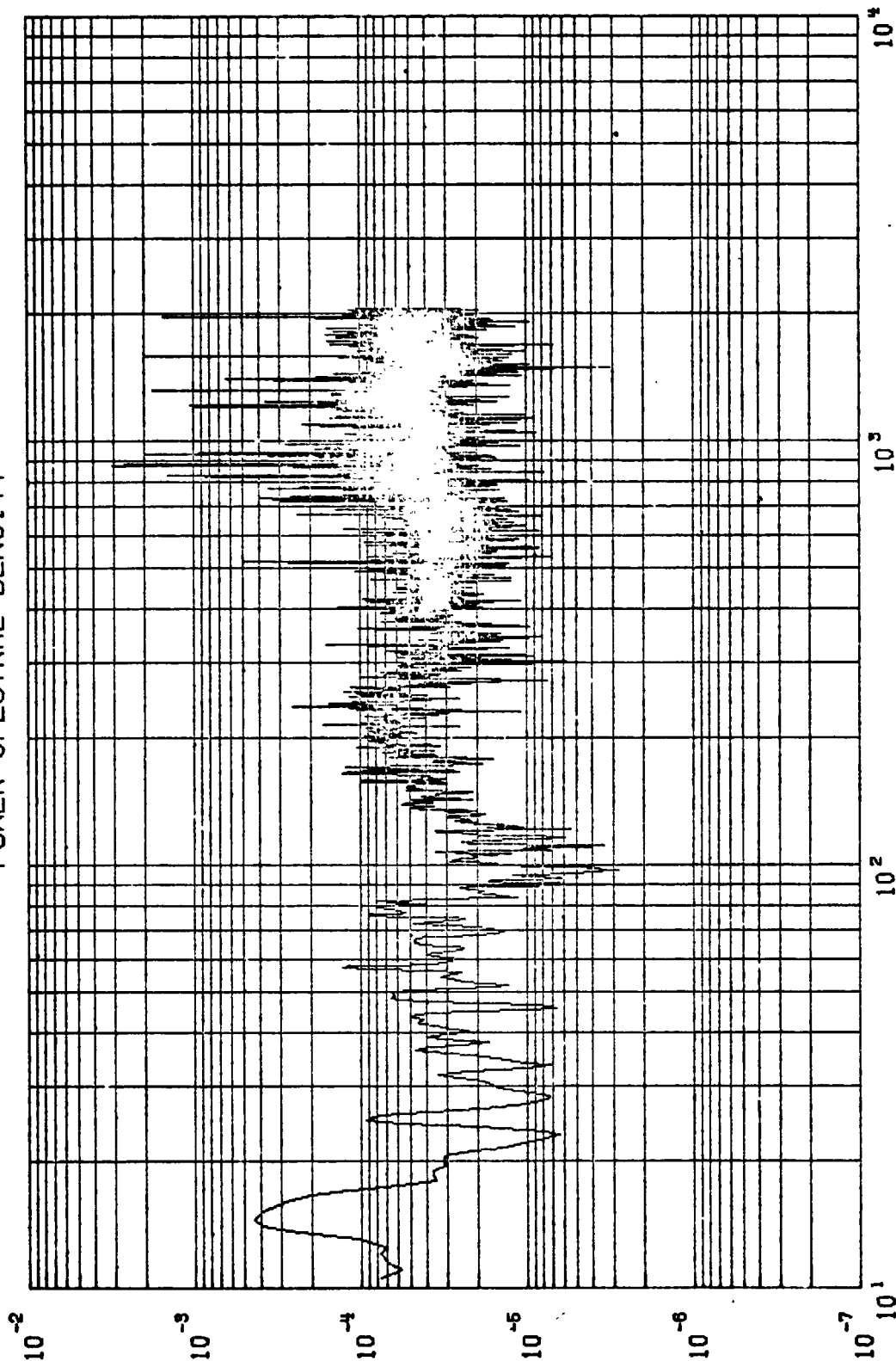
CY1820

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.34a

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $MEAN = -32126 \times 10^{-5}$      $\sigma^2 = 12915 \times 10^{-5}$      $\sigma = 35938 \times 10^{-5}$      $3\sigma = 10781 \times 10^{-5}$   
 $START = 67175.000 \text{ SEC}$      $STOP = 67177.000 \text{ SEC}$

CY1820

MAX 0 - 1  
4096 SPS

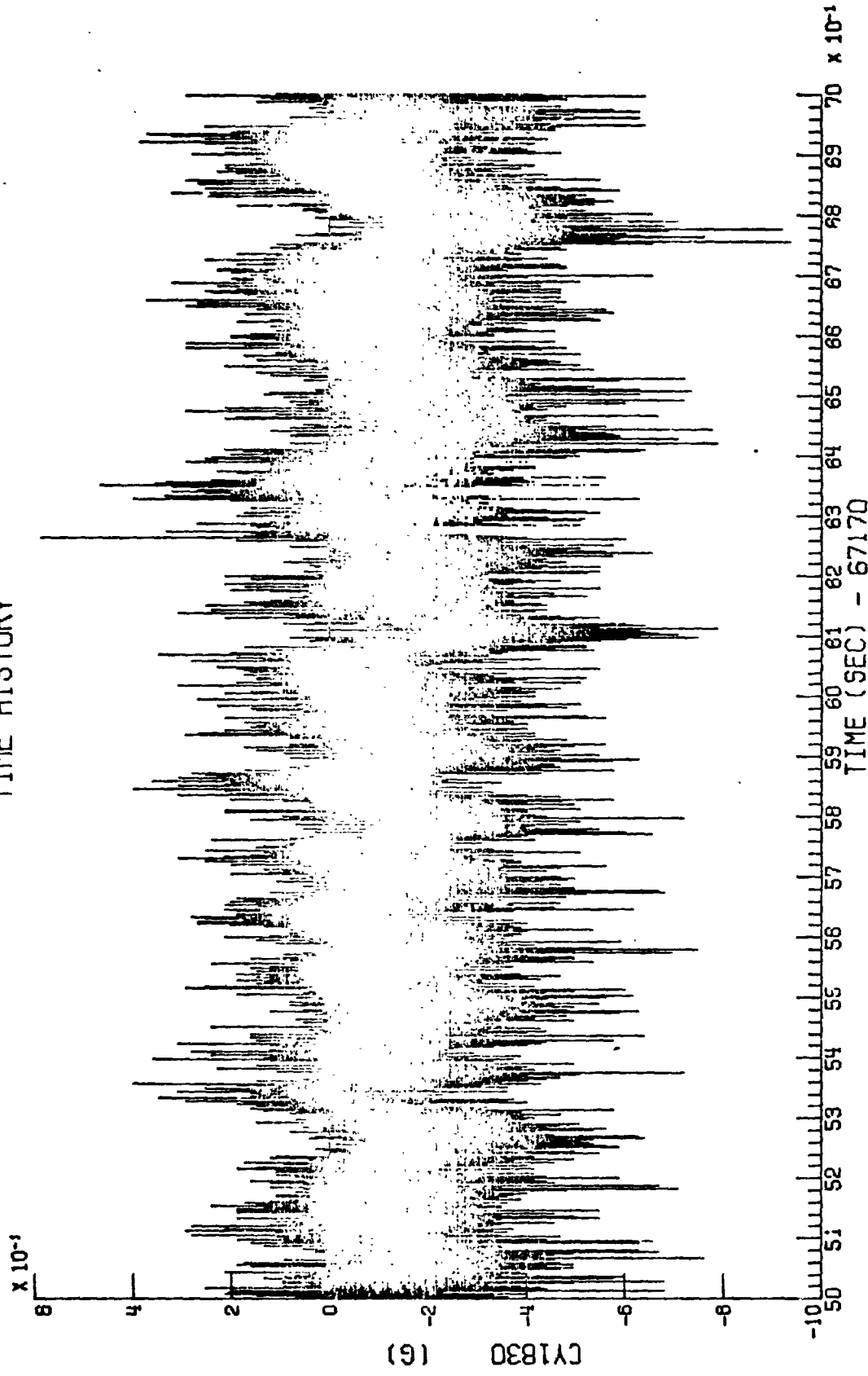
VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.34b



# TIME HISTORY



MAX = .587

MIN = -.934

CY1830

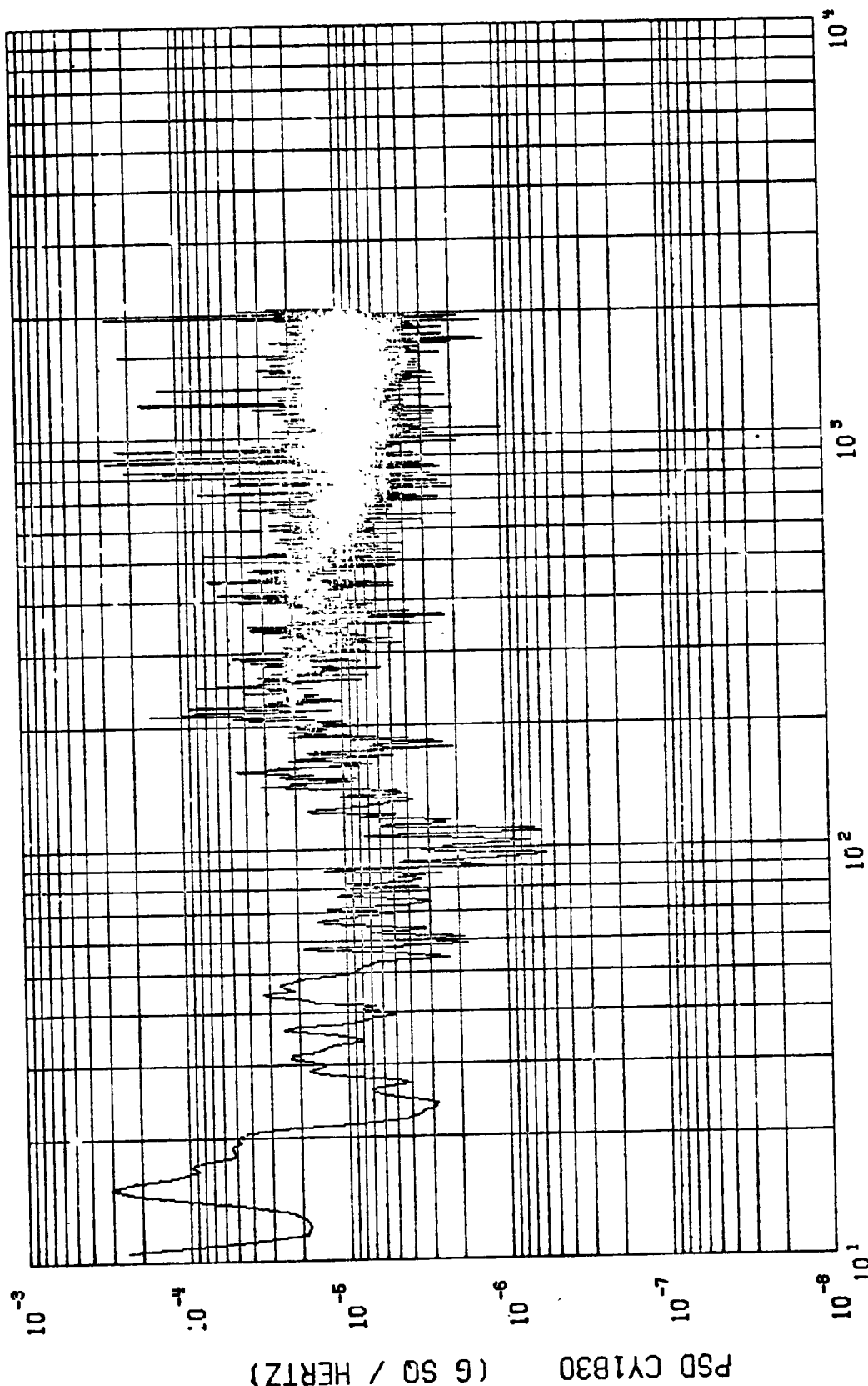
MAX Q - 1  
4096 SPS

VIKING B FLT (CIF)

Figure 4.35a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $MEAN = -14663 \times 10^{-5}$   
 $\sigma^2 = 30944 \times 10^{-5}$   
 $\sigma = 17591 \times 10^{-5}$   
 $3\sigma = 52773 \times 10^{-5}$

START = 67175.000 SEC

STOP = 67177.000 SEC

VIKING B FLT (CIF)

MAX Q - 1

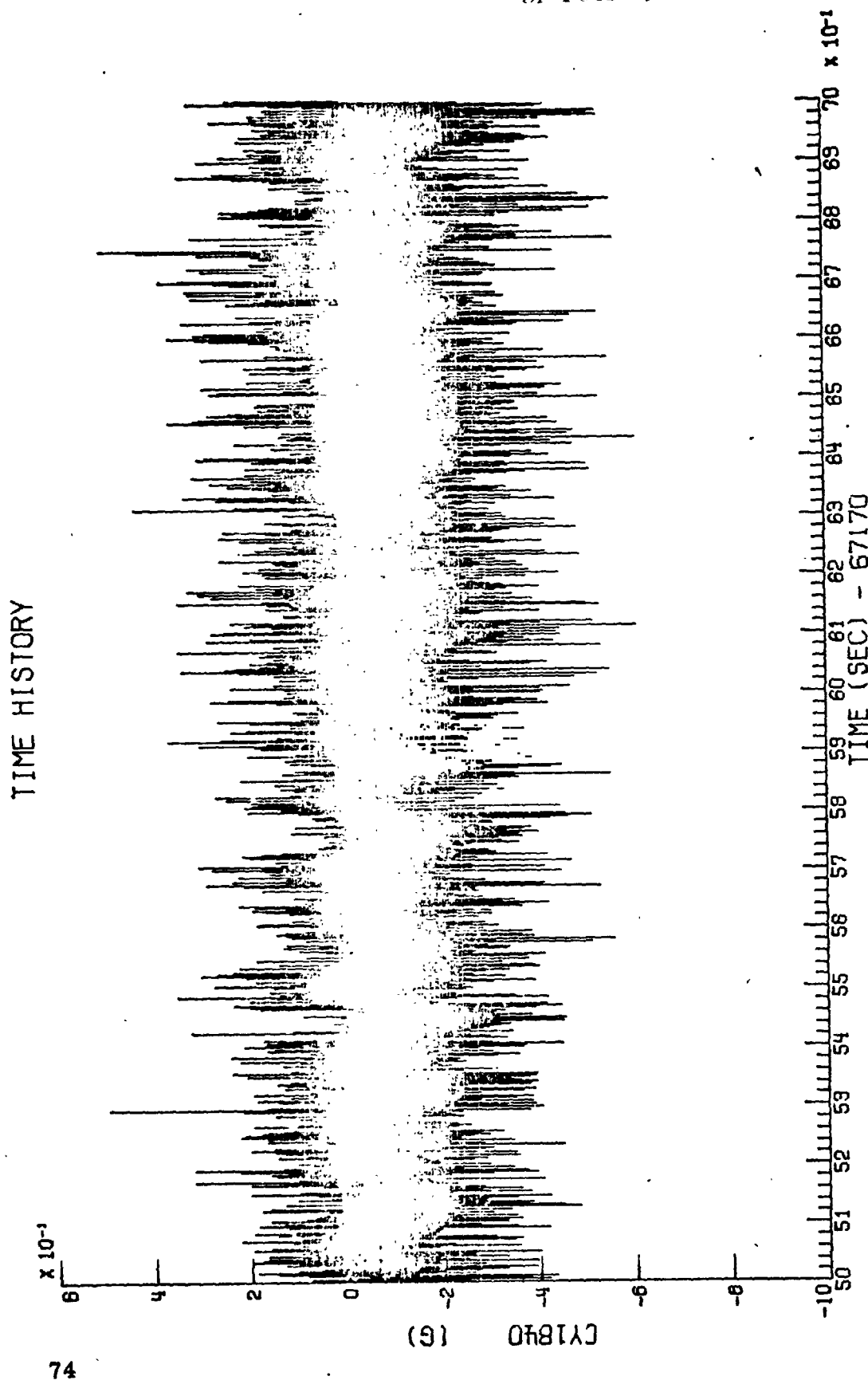
CY1830

4096 SPS

Figure 4. 35b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

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OF POOR QUALITY



CY1840

MAX Q - 1

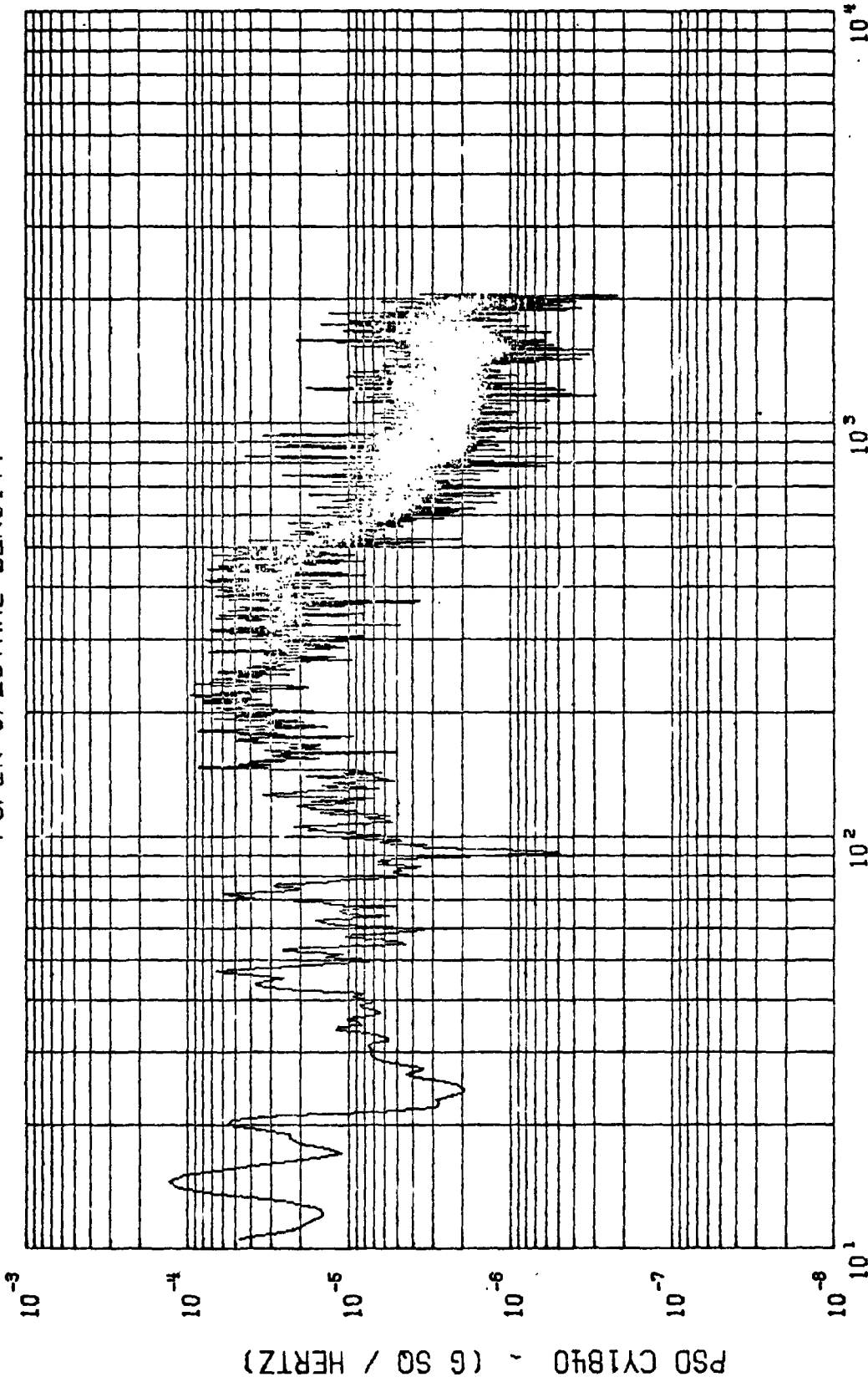
4096 SQS

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.36a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -82466 \times 10^{-5}$   
 $\sigma^2 = 20791 \times 10^{-5}$   
 $\sigma = 14419 \times 10^{-5}$   
 $3\sigma = 43257 \times 10^{-5}$

START = 67175.000 SEC

STOP = 67177.000 SEC

CY1840

MAX 0 - 1

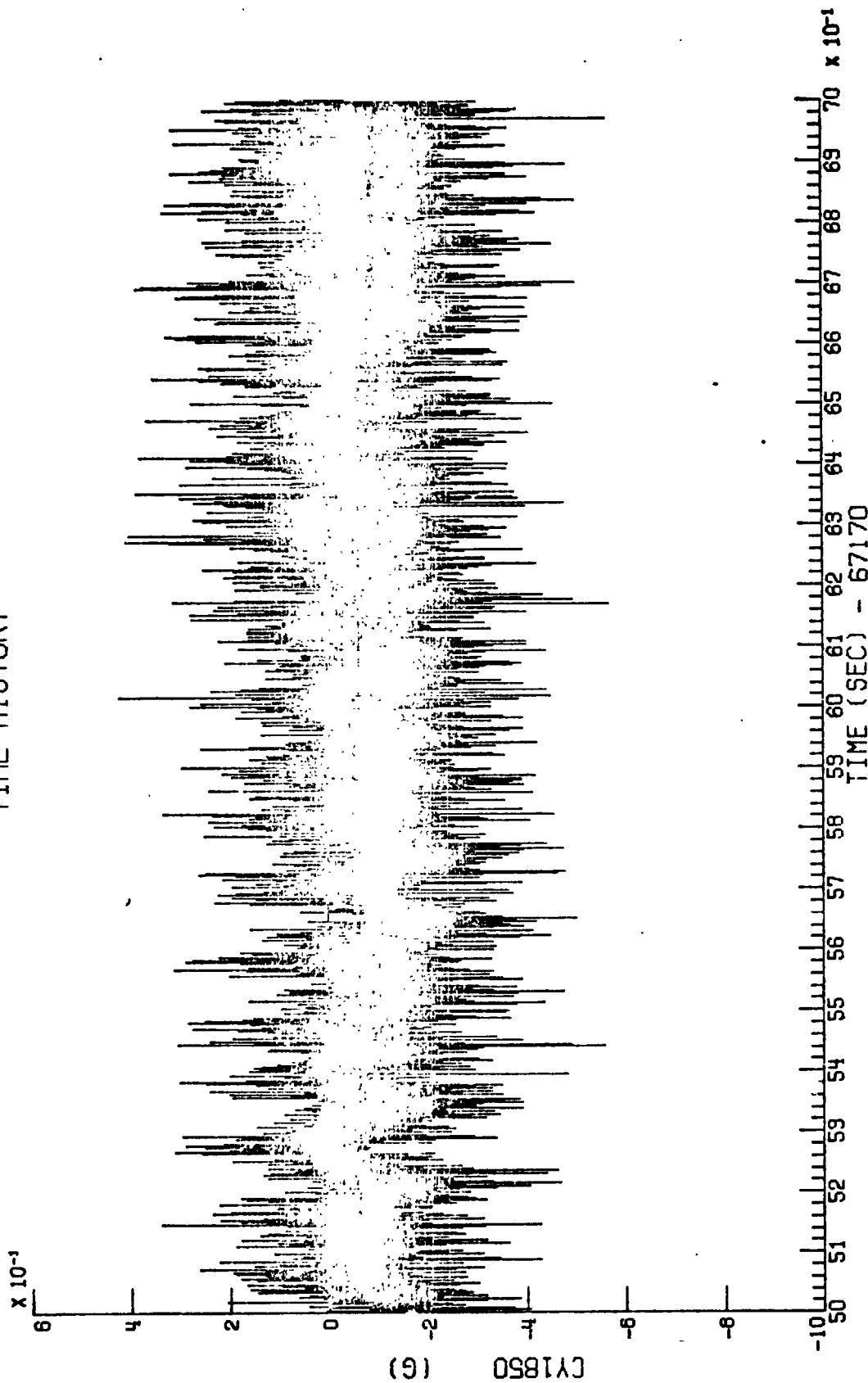
Figure 4.36b

VIKING B FLT (CIF)

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY



MAX = .422

MIN = -.567

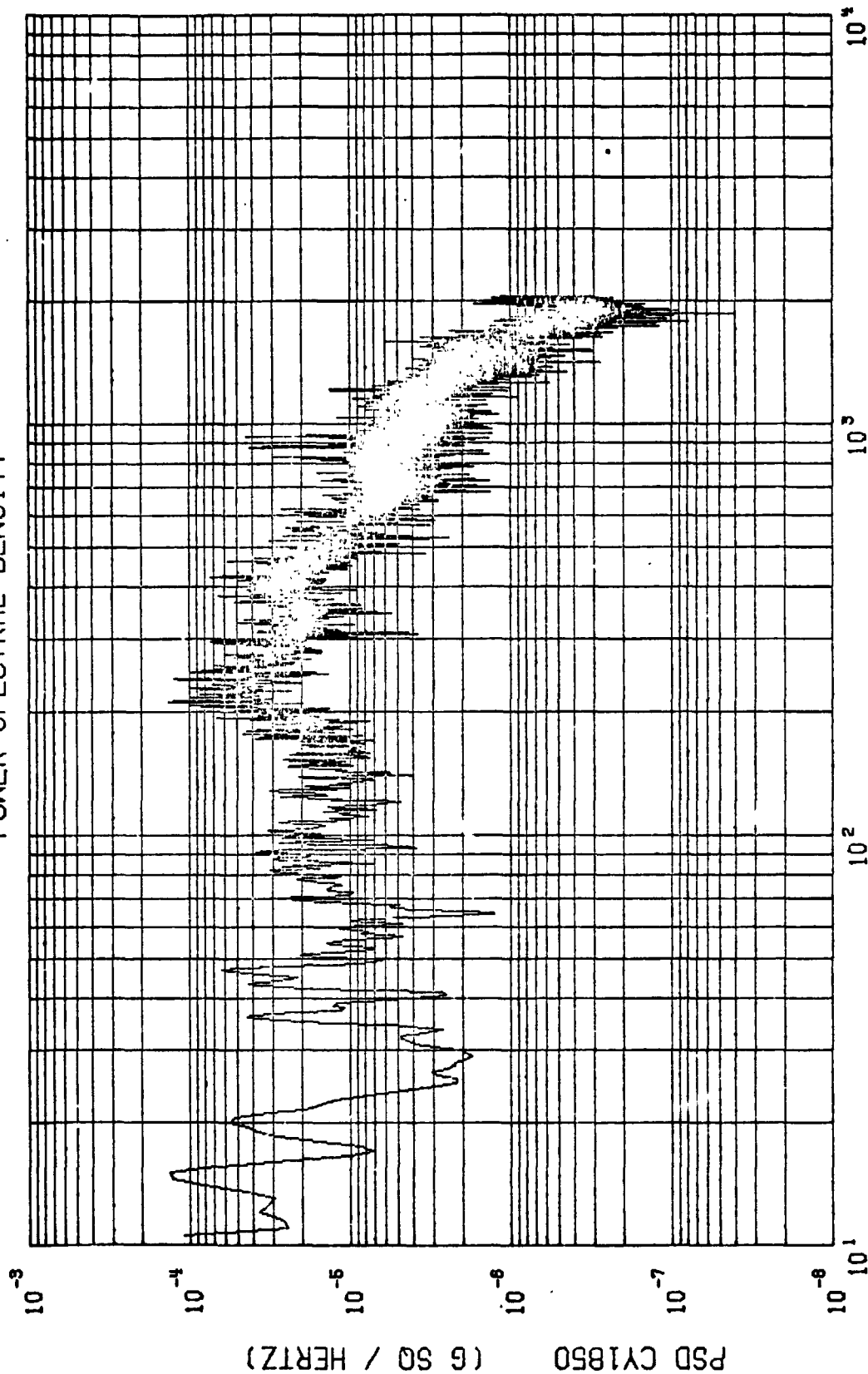
VIKING B FLT (CIF)

MAX Q - 1

CY1850

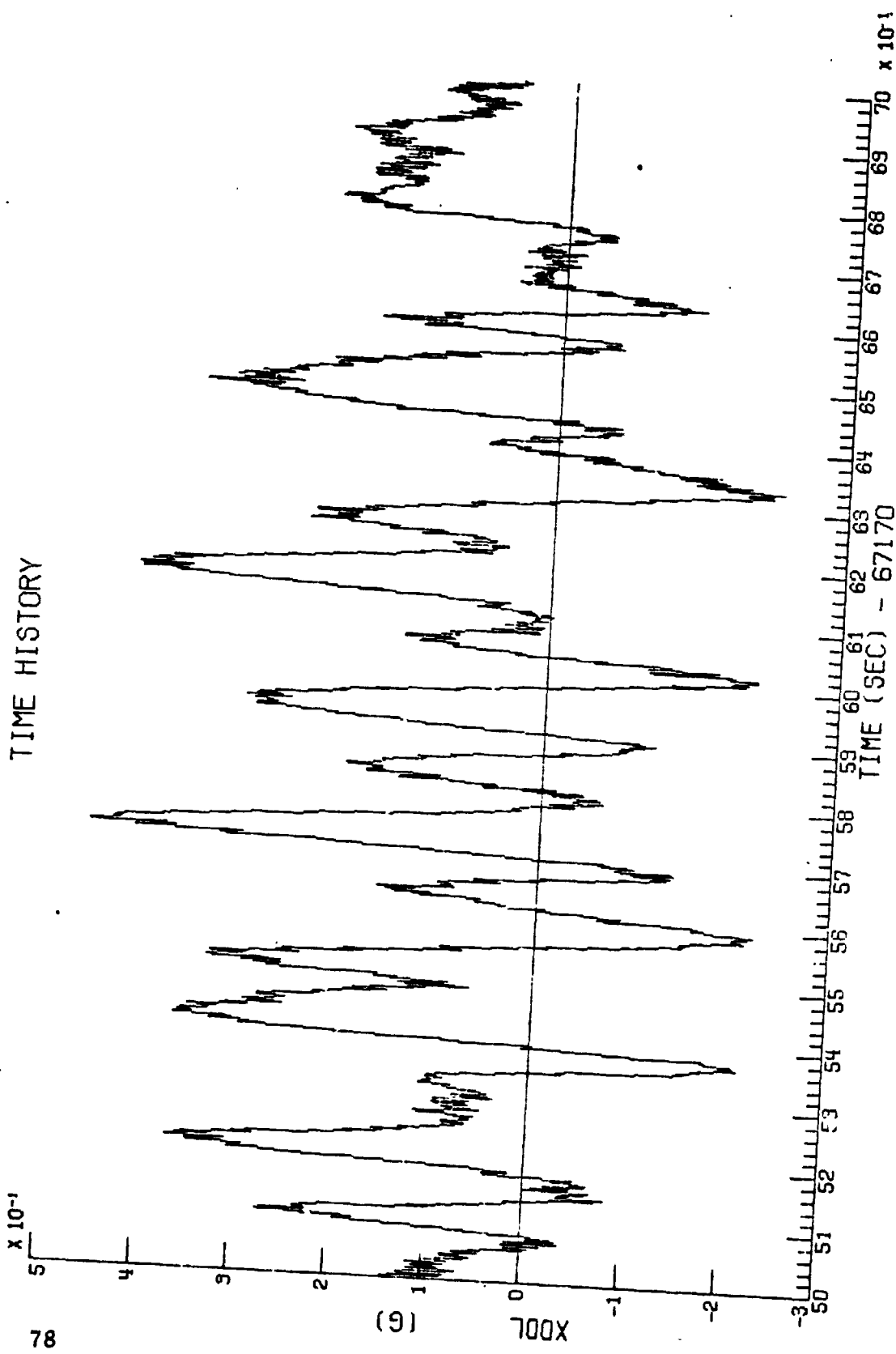
4096 SPS

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $MEAN = -6.0166 \times 10^{-4}$   
 $\sigma^2 = 1.9088 \times 10^{-5}$   
 $\sigma = 1.3815 \times 10^{-3}$   
 $3\sigma = 4.1447 \times 10^{-3}$

VIKING B FLT (CIF)      MAX Q - 1      CY1850  
 NASA-LANGLEY SIGNAL ANALYSIS PROGRAM      09/22/75      4096 SPS      Figure 4.37b



MAX = .459

MIN = -.234

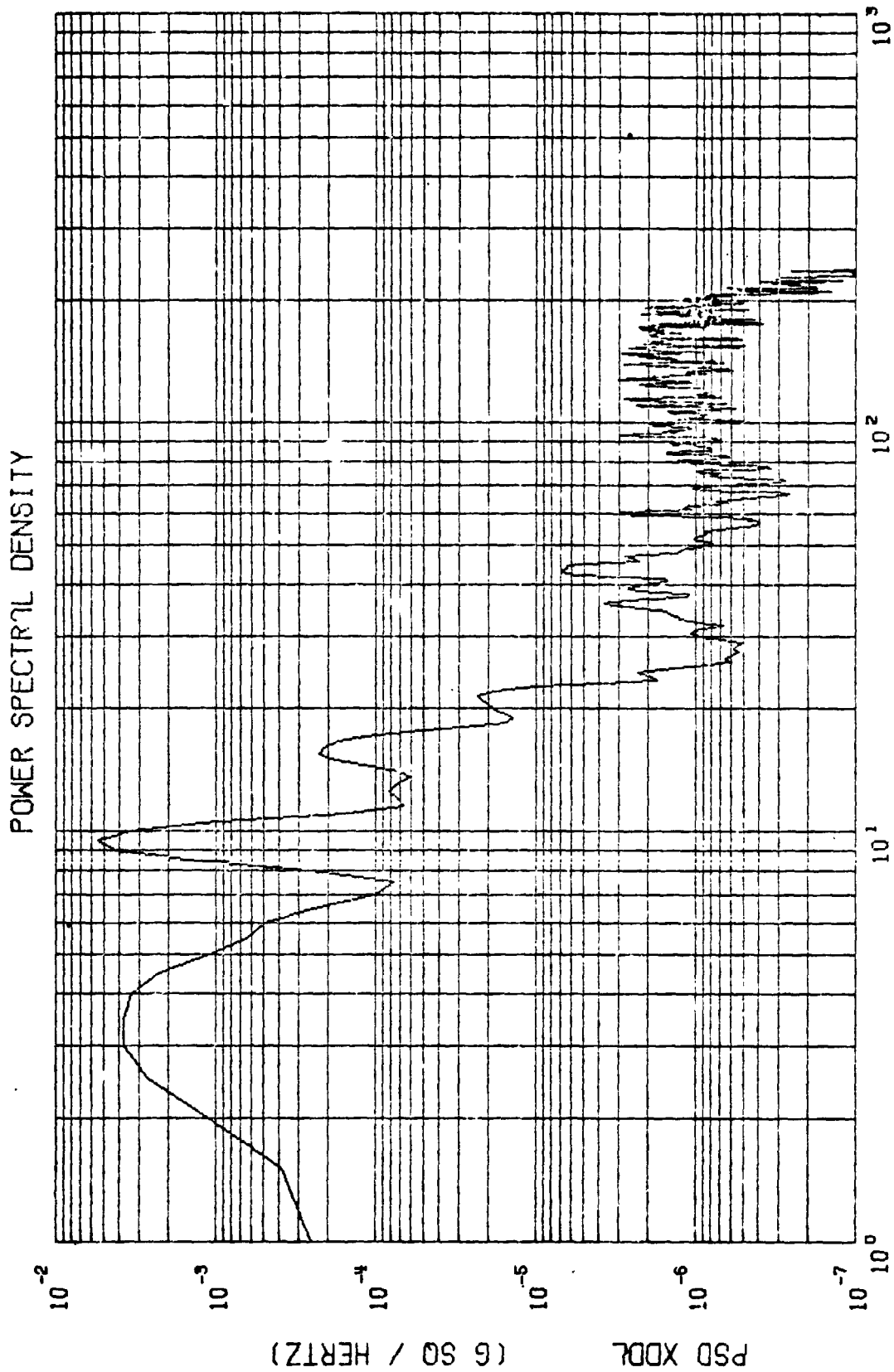
VIKING B FLT (CIF)

MAX 0 - 1

XDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.38a



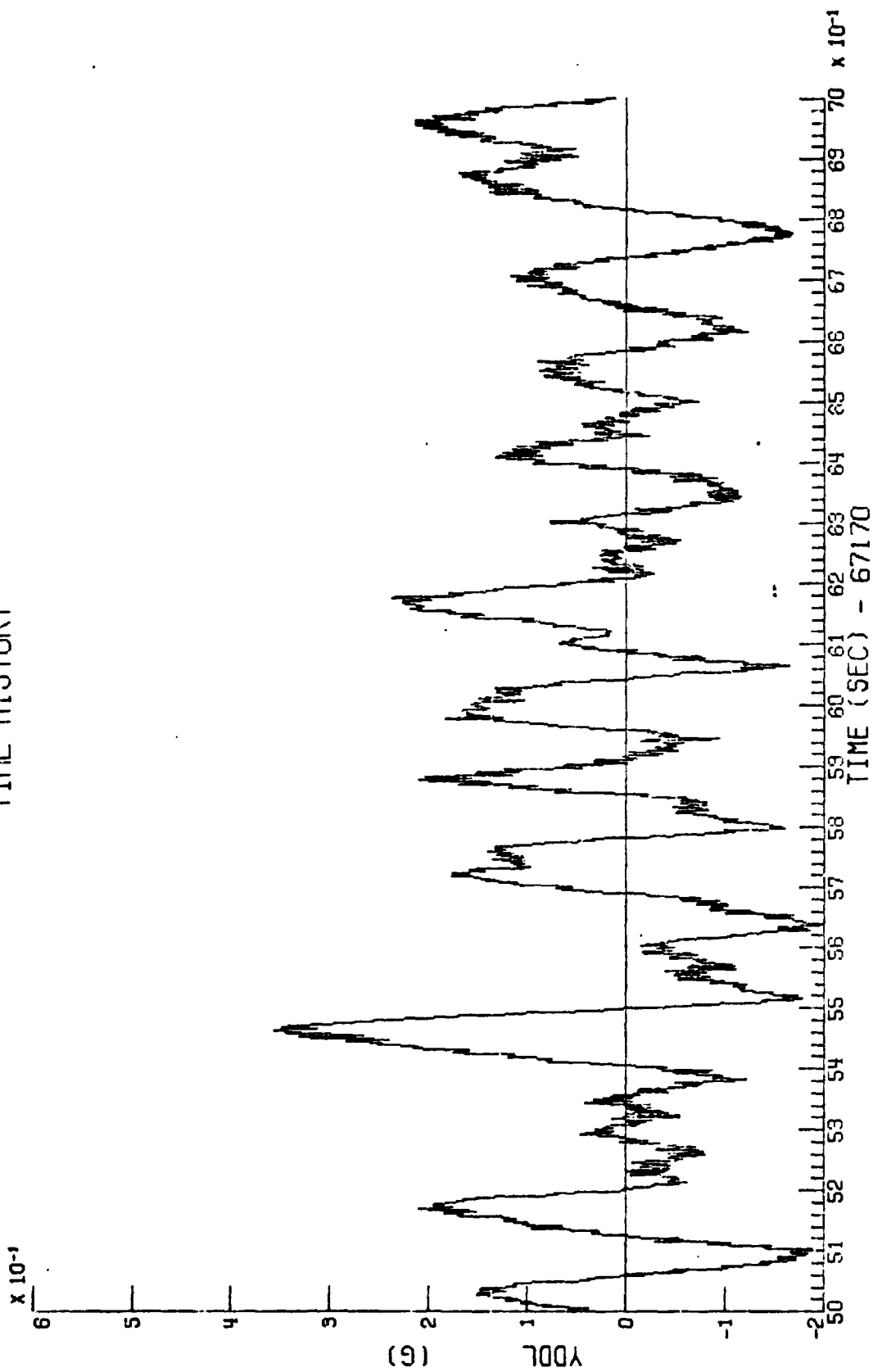
$\Delta F = .500$       START =  $67175.000 \text{ SEC}$       STOP =  $67177.000 \text{ SEC}$   
 MEAN =  $88843 \times 10^{-6}$        $\sigma^2 = 19456 \times 10^{-6}$        $\sigma = 13948 \times 10^{-5}$        $3\sigma = 41845 \times 10^{-5}$   
 VIKING B FLT (CIF)      MAX 0 -- 1      XDDL

Figure 4.38b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75



# TIME HISTORY



MAX = .355

MIN = -.195

VIKING B FLT (CIF)

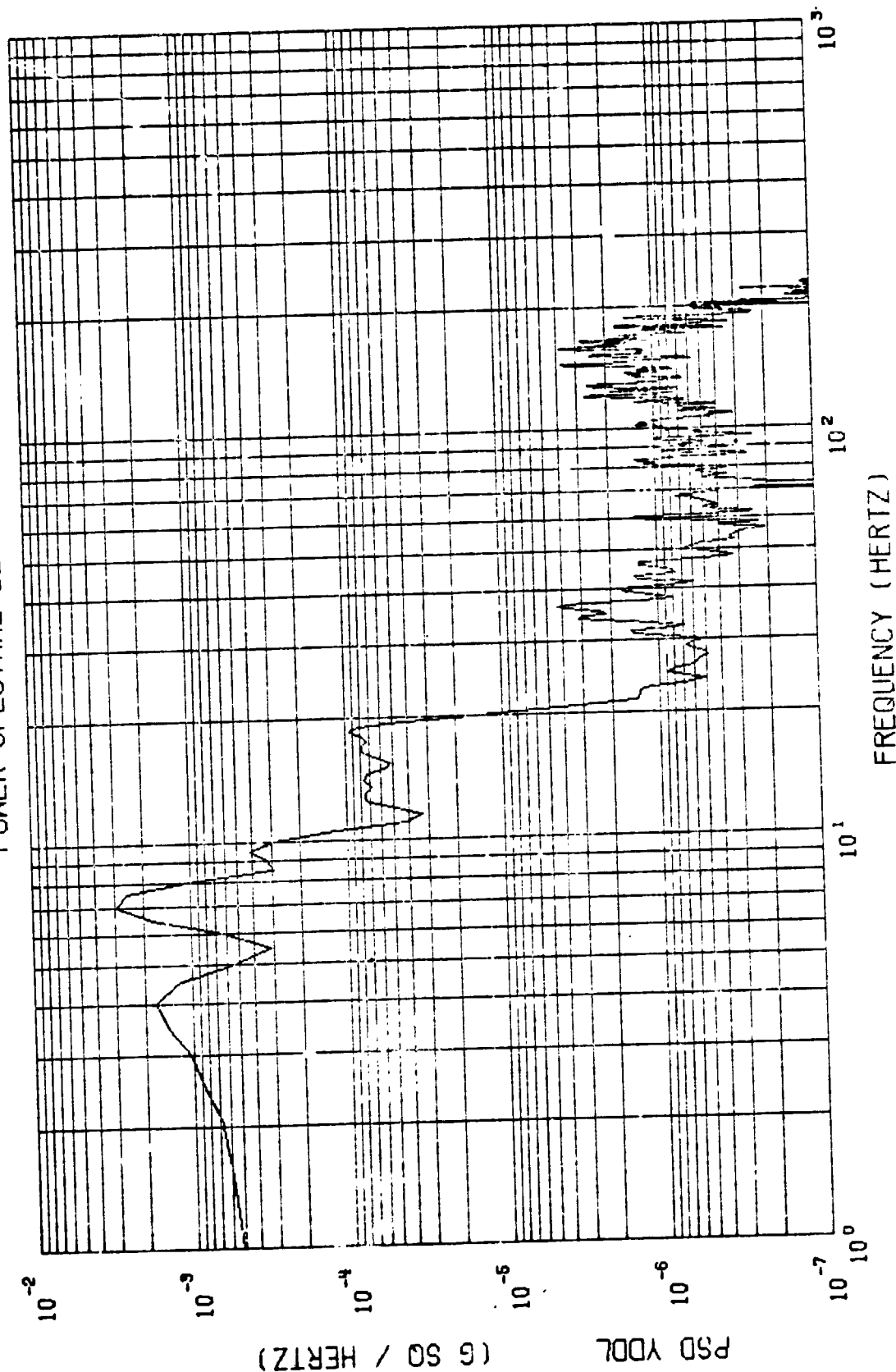
YDDL

MAX 0 - 1

Figure 4.39a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# POWER SPECTRAL DENSITY



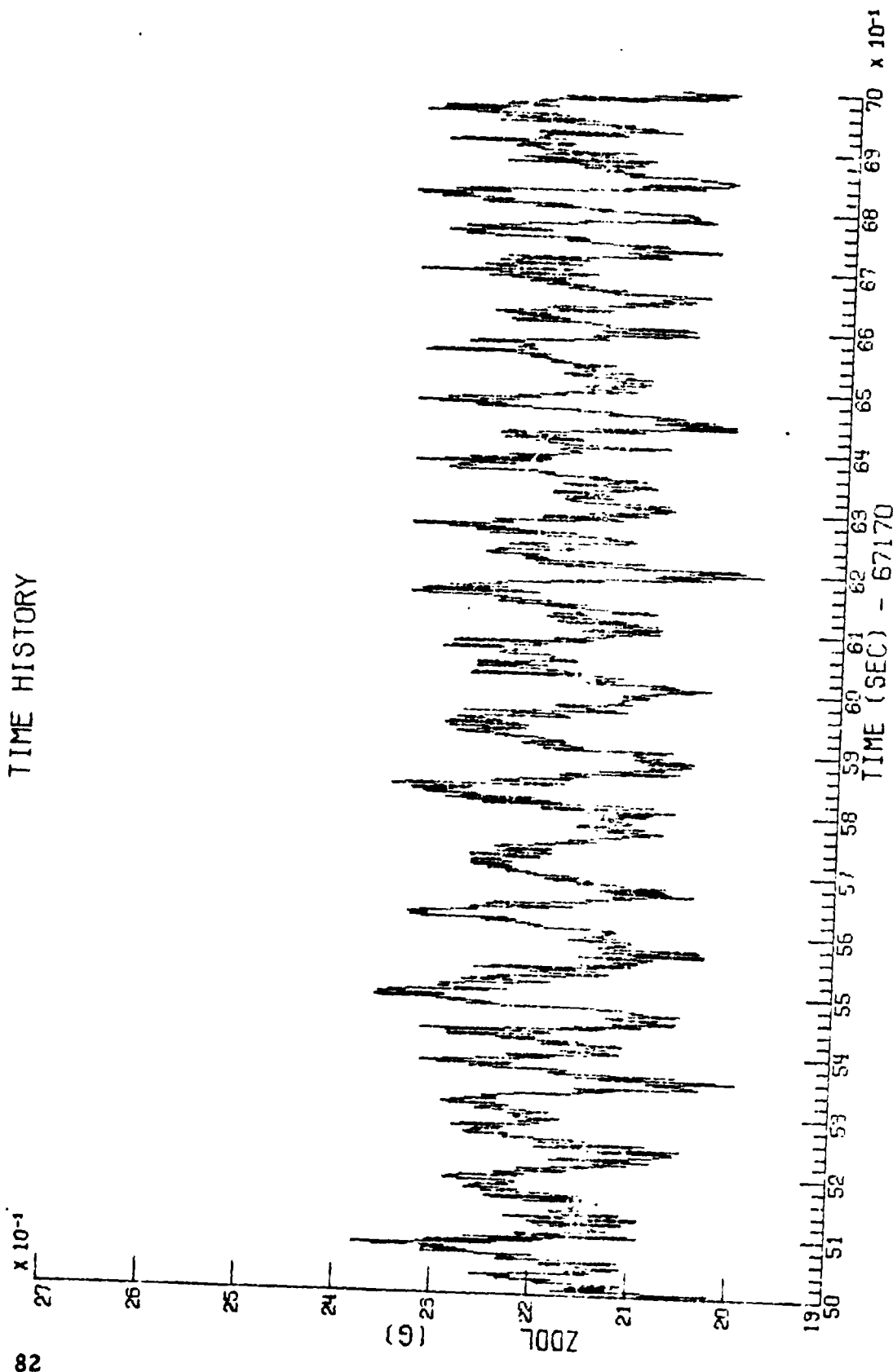
$\Delta F = .500$   
 $MEAN = 22448 \times 10^{-6}$   
 $\sigma = 10511 \times 10^{-6}$   
 $\sigma = 10301 \times 10^{-5}$   
 $3\sigma = 30903 \times 10^{-5}$   
 $STOP = 67177.000 \text{ SEC}$

YDDL  
Figure 4.39b

MAX 0 - 1

VIKING B FLT (CIF)

# TIME HISTORY



MAX = 2.380

MIN = 1.983

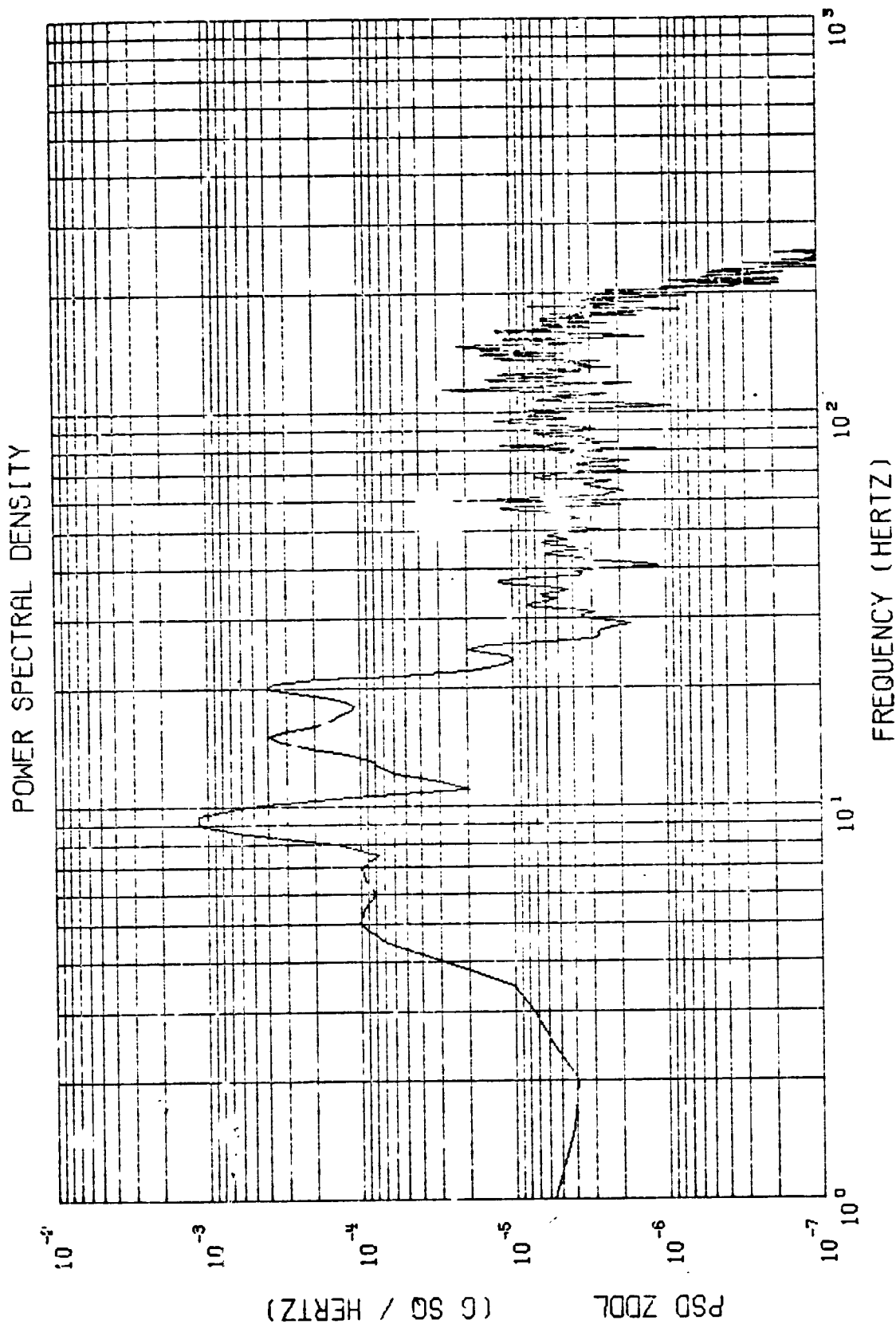
PIKING B FLT (CIP)

MAX 0 - 1

Z00L

NPSO 1000LEY 510000 00/00/00 09/22/75

Figure 4.40a

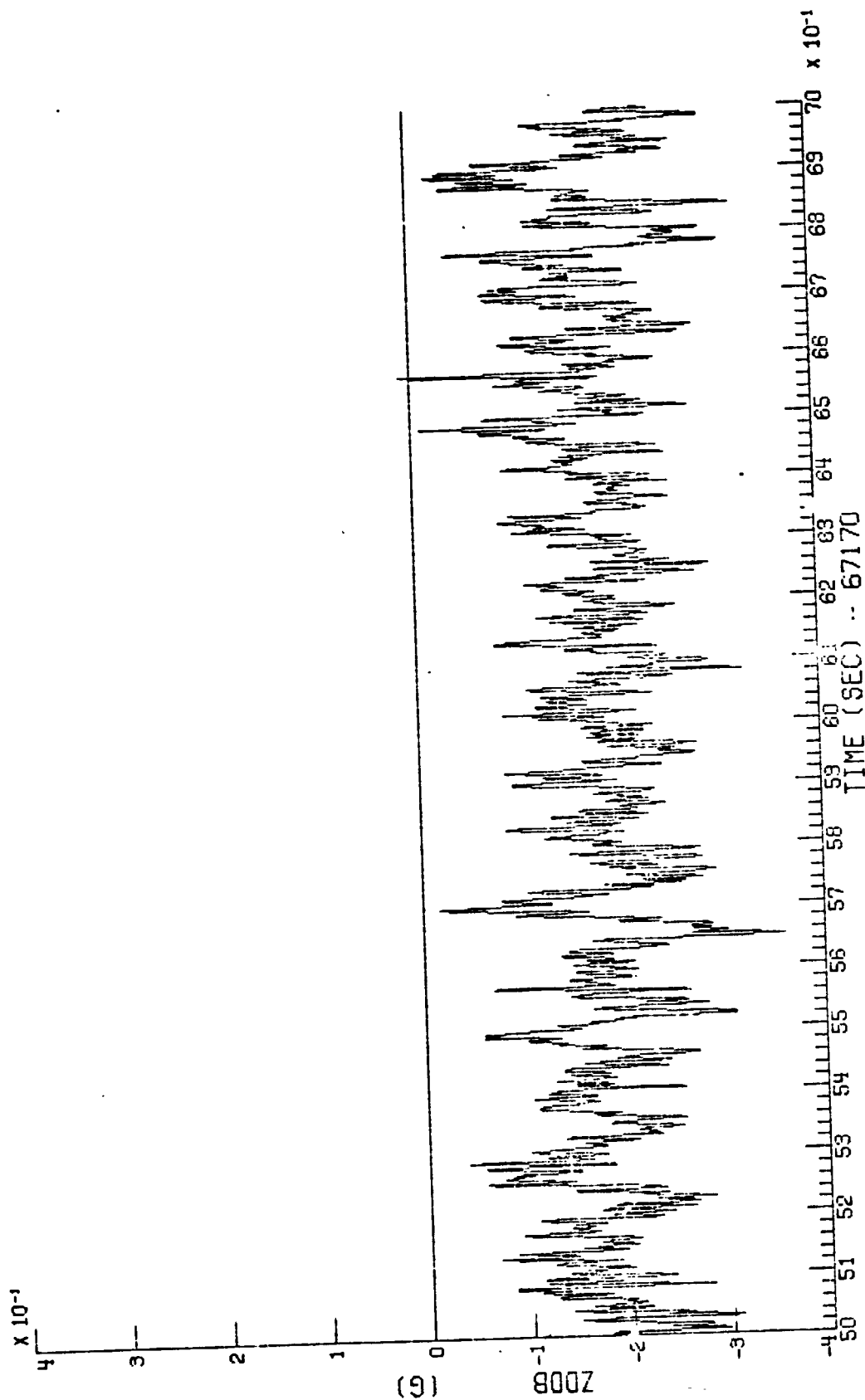


$\Delta F = .503$   
 $MEAN = 21808 \times 10^{-4}$      $\sigma^2 = 51222 \times 10^{-7}$      $\sigma = 71597 \times 10^{-4}$      $3\sigma = 21479 \times 10^{-4}$   
 $\Delta F = .503$      $START = 67175.000 \text{ SEC}$      $STOP = 67177.000 \text{ SEC}$

VIKING B FLT (CIF)    MAX 0 -- 1    ZDDL

Figure 4.40b

# TIME HISTORY



MIN = -.359

MAX = .010

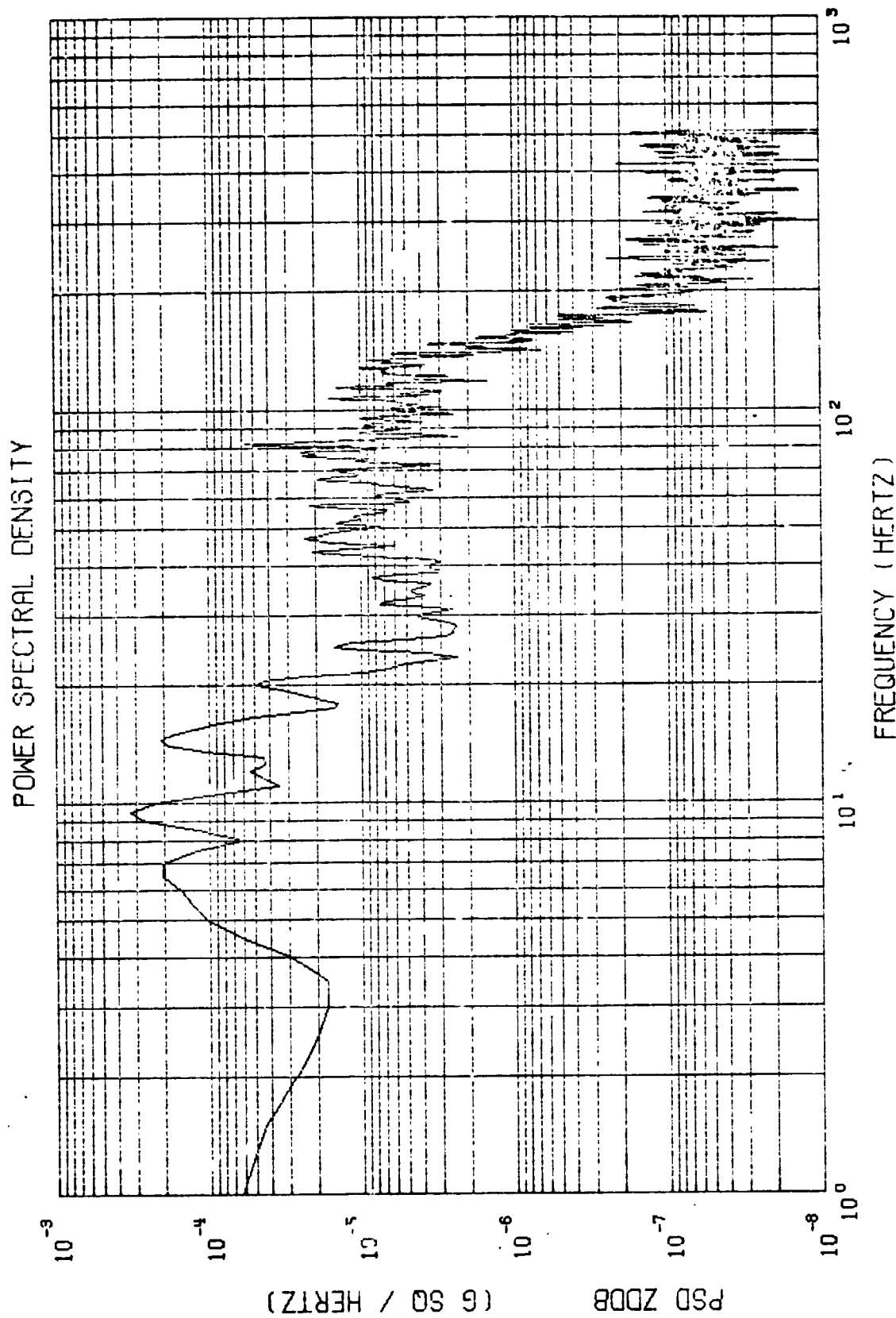
Z008

MAX Q - 1

VIKING B FLT (CIF)

Figure 4.41a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75



$\Delta F = .500$   
 MEAN =  $-1.7793 \times 10^{-5}$      $\sigma^2 = 2.9254 \times 10^{-7}$      $\sigma = 5.4087 \times 10^{-5}$      $3\sigma = 1.6226 \times 10^{-4}$   
 START = 67175.000 SEC    STOP = 67177.000 SEC

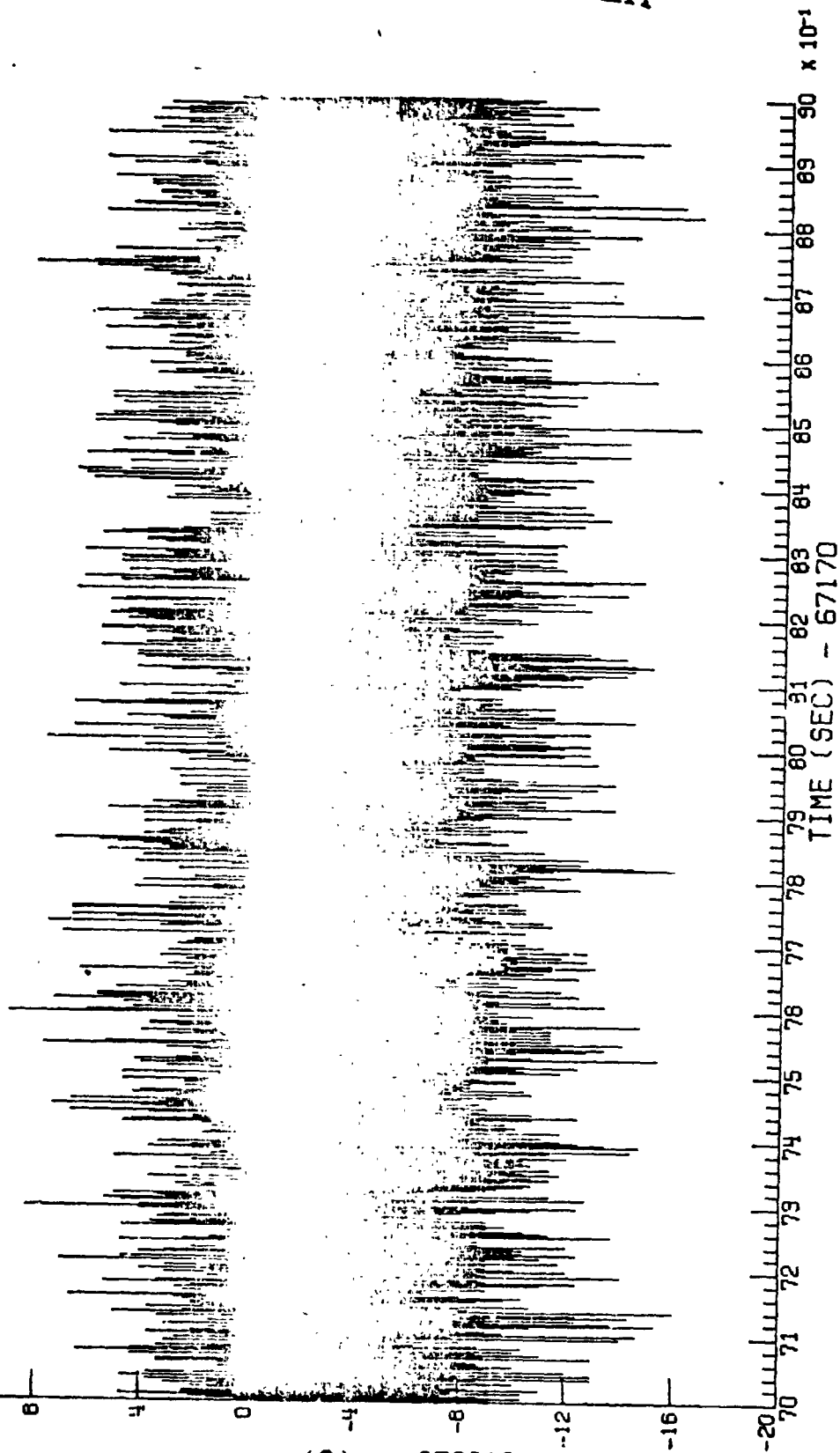
VIKING B FLT (CIF)  
 ZDDB  
 MAX 0 - 1

Figure 4.41b

# TIME HISTORY

86  $\times 10^{-1}$

(G) CY1820



MAX = .900

MIN = -1.667

VIKING B FLT (CJF)

MAX Q - 1.5

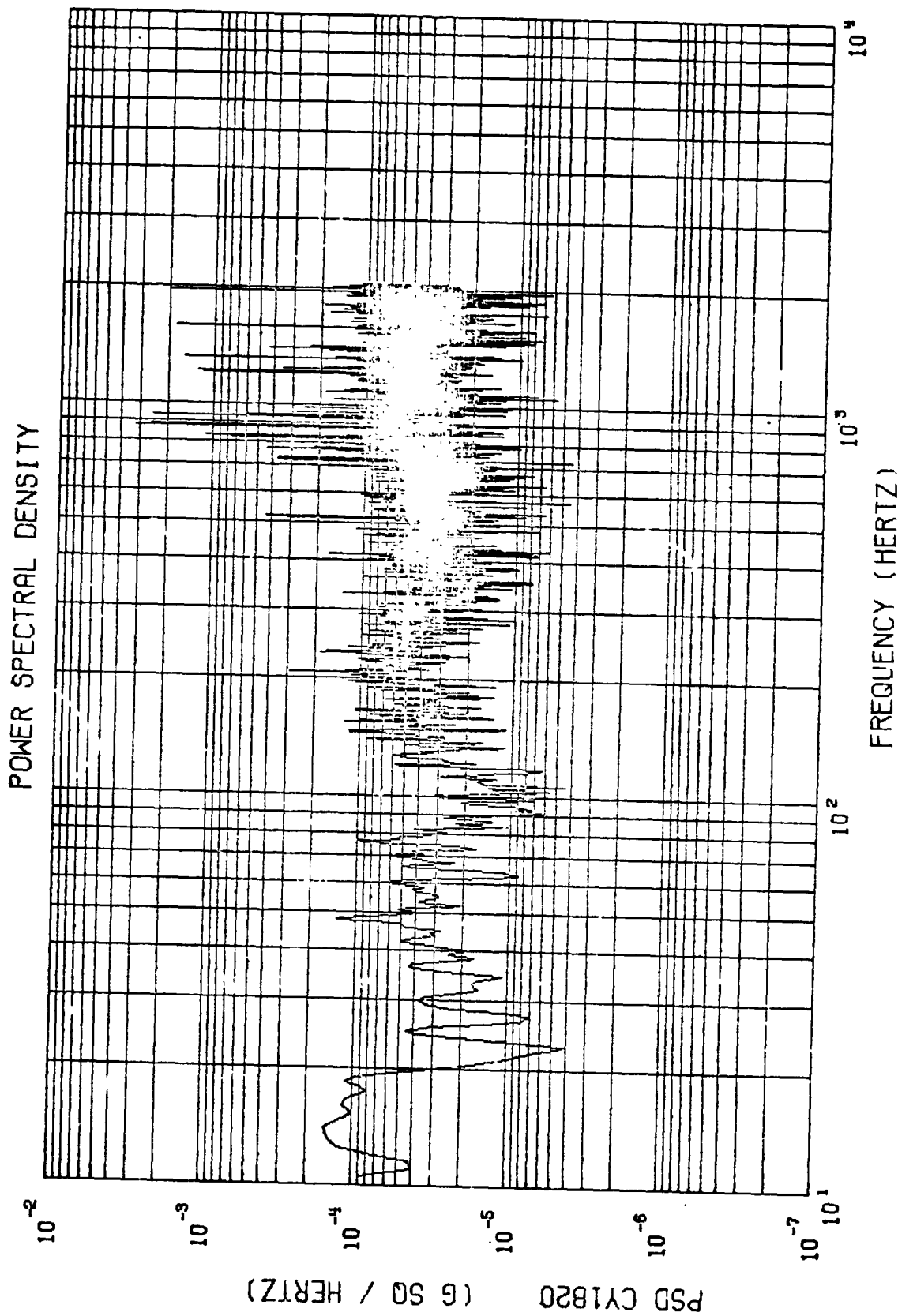
CY1820

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.42a

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$\Delta F = .499$

START = 67177.000 SEC STOP = 67178.999 SEC

MEAN =  $-32283 \times 10^{-5}$   $\sigma = 36086 \times 10^{-5}$   $3\sigma = 10826 \times 10^{-5}$

VIKING B FLT (CIF)

MAX Q - 1.5

CY1820

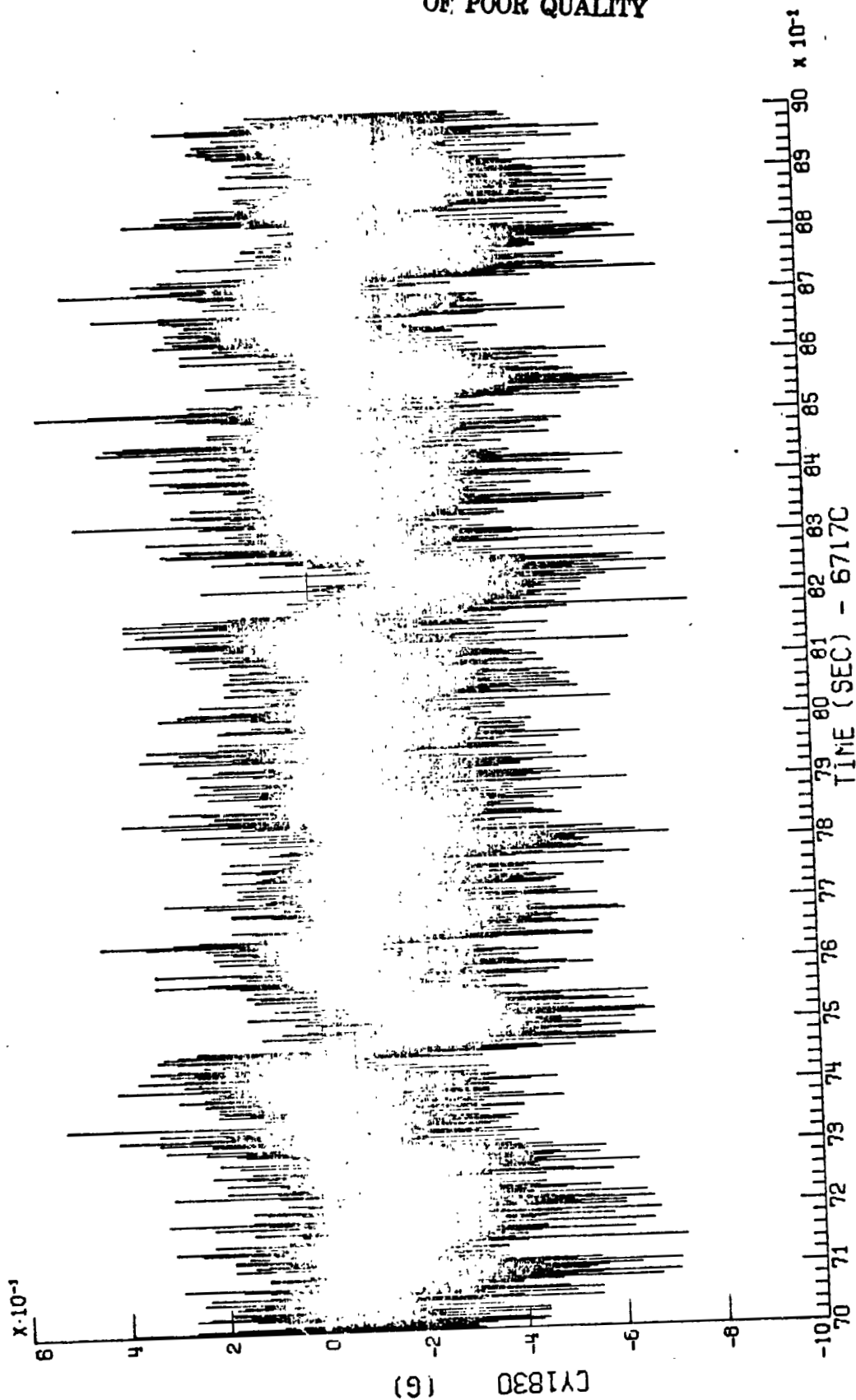
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

4096 SPS

Figure 4.42b



# TIME HISTORY



MIN = -.761

MAX = .534

CY1830  
Figure 4.43a

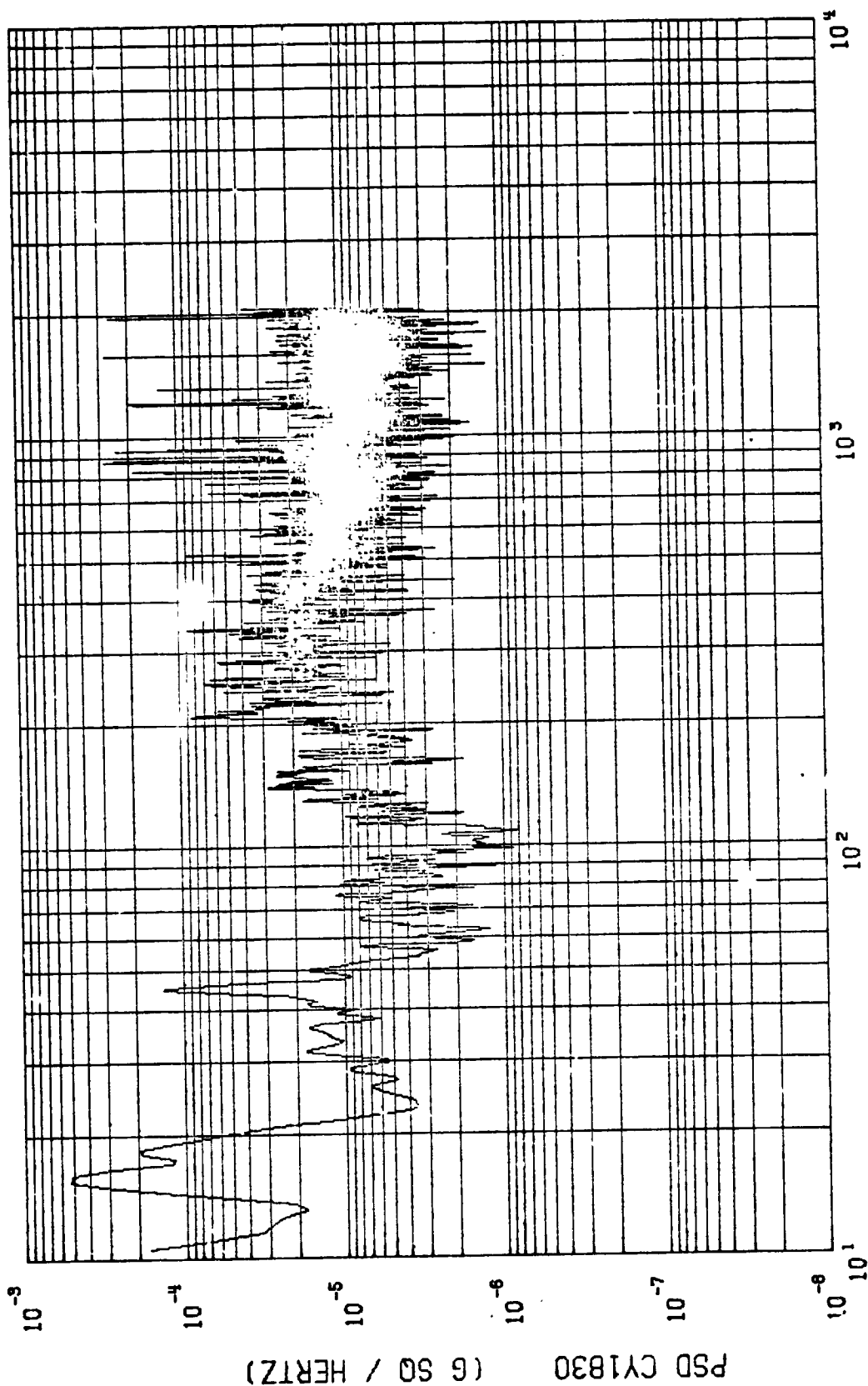
MAX Q - 1.5  
4096 sps

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

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OF POOR QUALITY

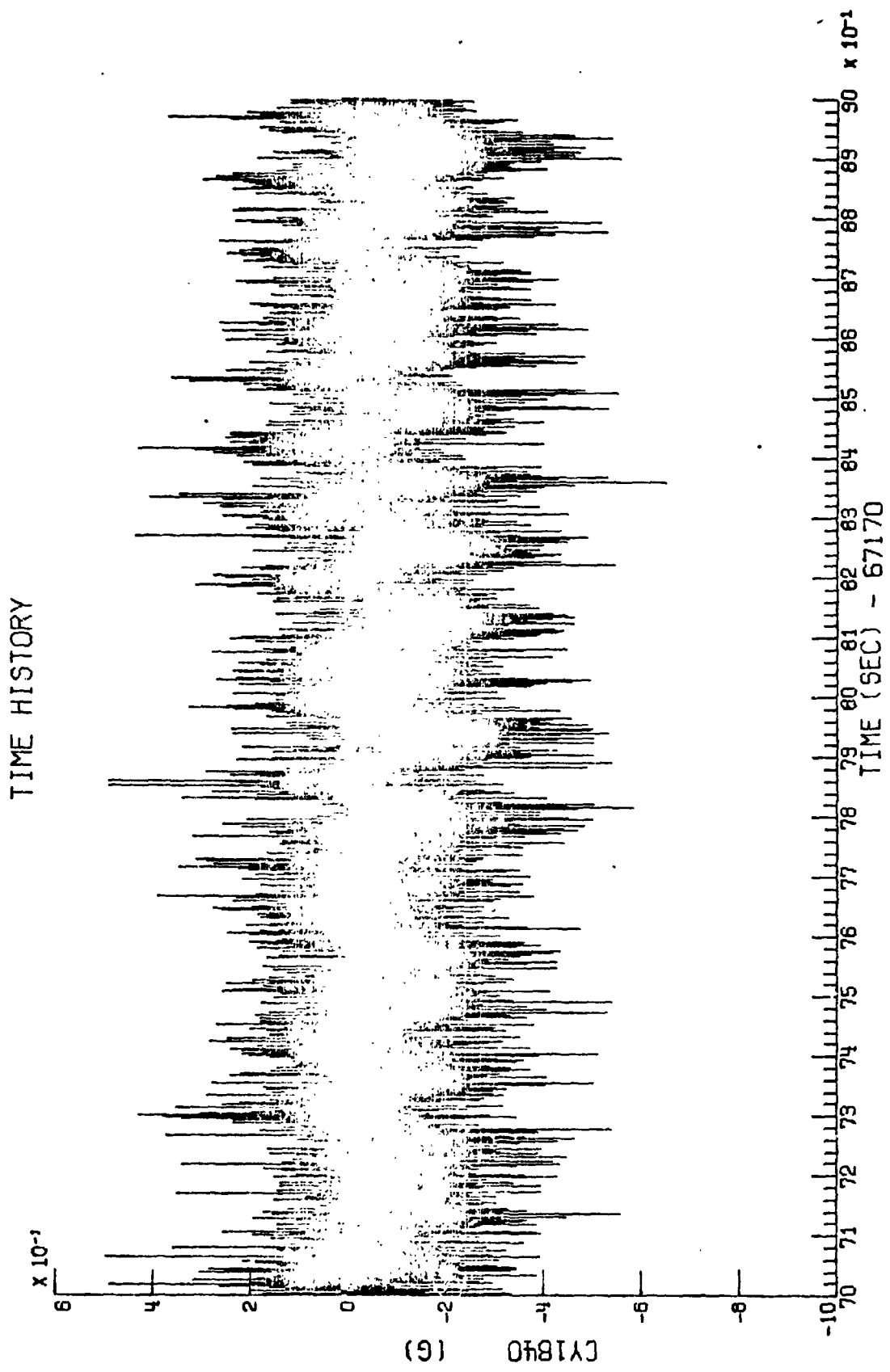
# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $MEAN = -1294 \times 10^{-4}$   
 $\sigma^2 = 31124 \times 10^{-5}$   
 $\sigma = 17642 \times 10^{-5}$   
 $3\sigma = 52926 \times 10^{-5}$

VIKING B FLT (CIF)  
 MAX Q - 1.5  
 4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75  
 Figure 4.43b



MAX = .494

MIN = -.650

VIKING 8 FLT (CIF)

MAX Q - 1.5

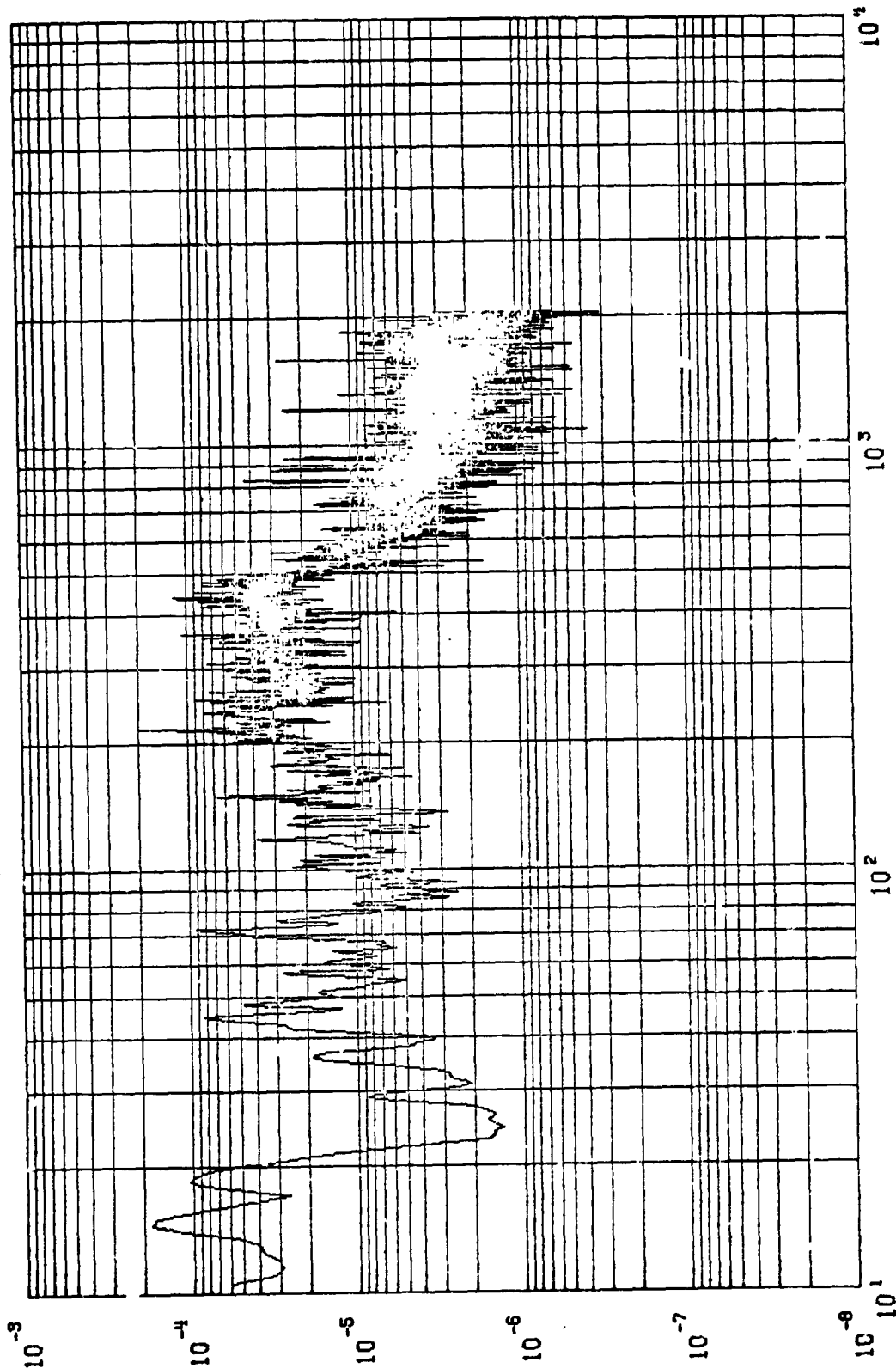
4096 SP5

CY1840

Figure 4.44a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

STOP = 67178.993 SEC

START = 67177.000 SEC

$\Delta F = .499$

$3\sigma = 44724 \times 10^{-5}$

$\sigma = 14908 \times 10^{-5}$

$\sigma^2 = 22225 \times 10^{-6}$

MEAN =  $-80125 \times 10^{-6}$

CY1840

MAX Q - 1.5

VIKING B FLT (CIF)

Figure 4.44b

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY

$\times 10^{-1}$

6

4

2

0

(g)

CY1850

6

8

-10

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

$\times 10^{-1}$

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TIME (SEC) - 67170

MAX = .563

MIN = -.611

VIKING B FLT (CIF)

MAX Q - 1.5

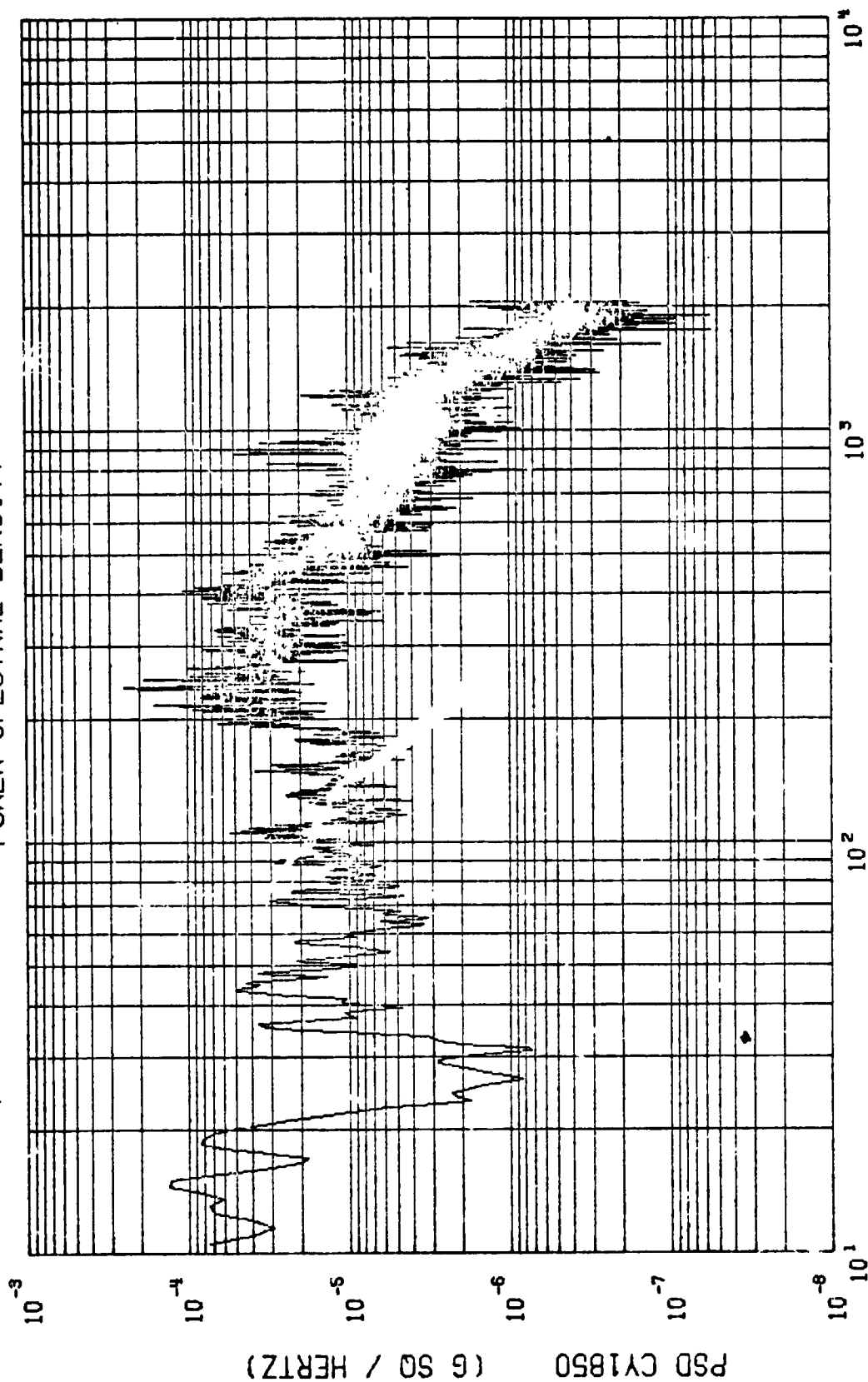
CY1850

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.45a

# POWER SPECTRAL DENSITY



$\Delta F = .499$

START = 67177.000 SEC

STOP = 67178.999 SEC

MEAN =  $-81307 \times 10^{-5}$

$\sigma^2 = 21042 \times 10^{-6}$

$\sigma = 146.05 \times 10^{-3}$

$3\sigma = 43817 \times 10^{-3}$

VIKING B FLT (CIF)

MAX Q - 1.5

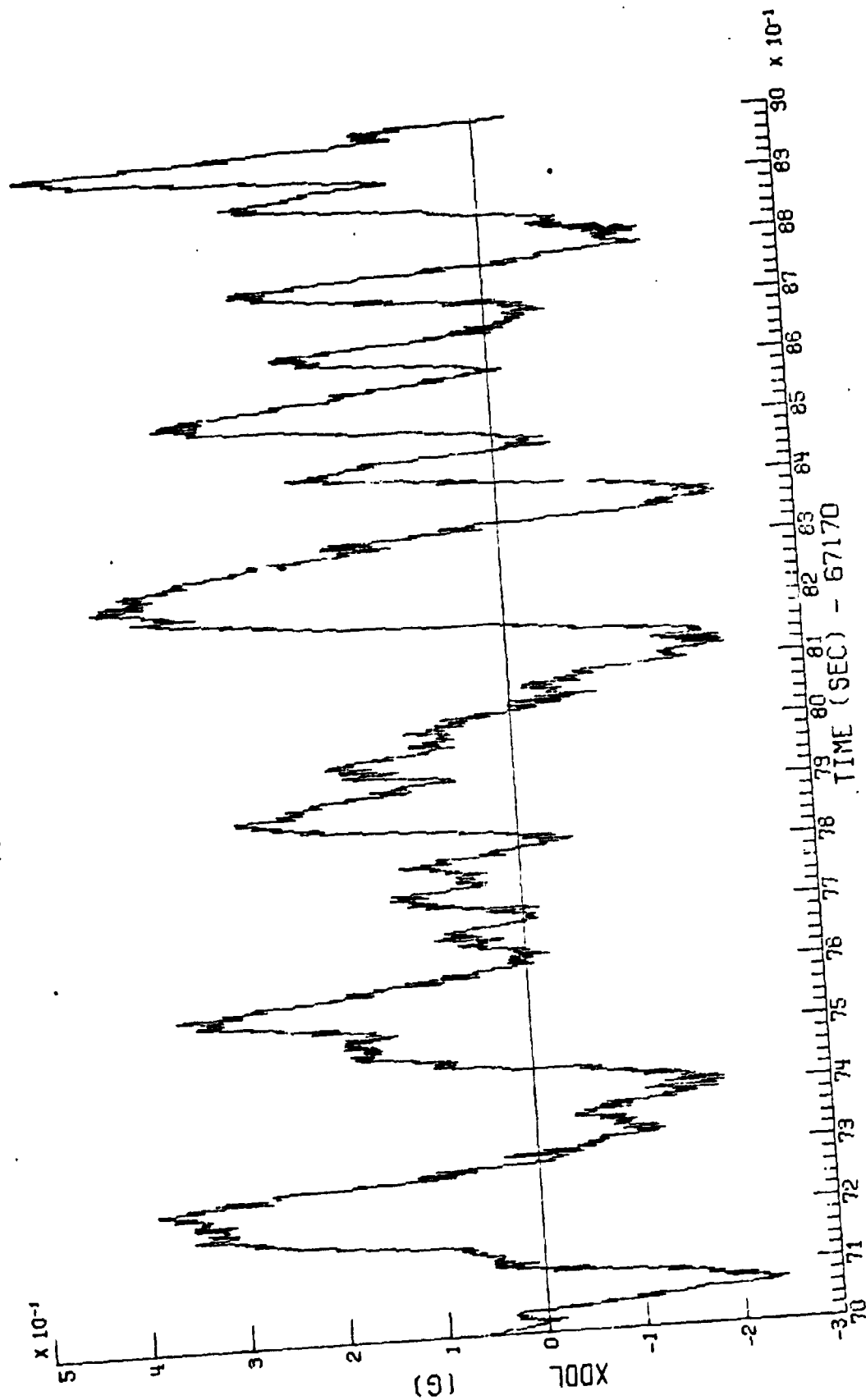
CY1850

4096 SPS

NASH-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.45b

# TIME HISTORY



MIN = -.244

MAX = .467

XDDL

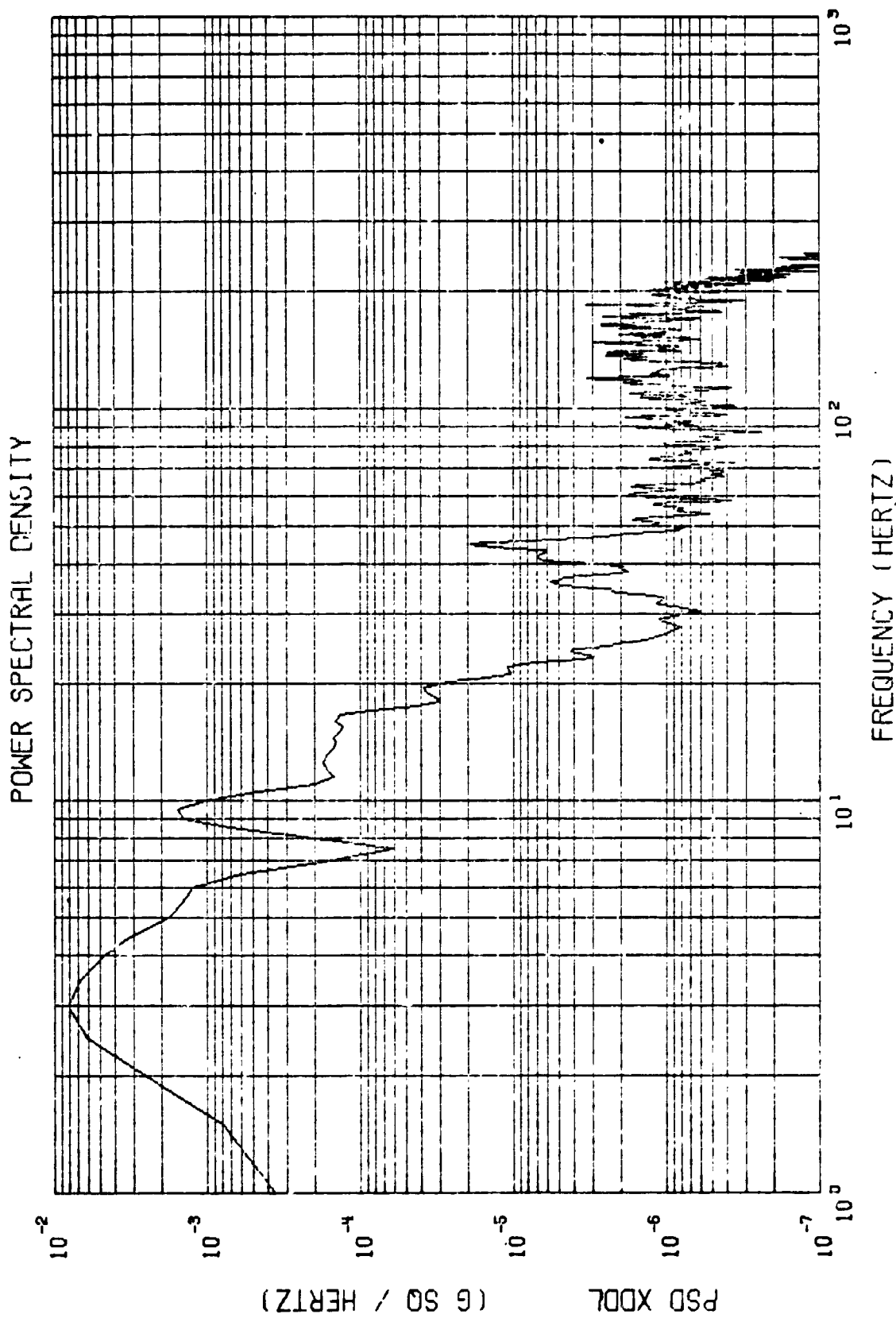
MAX Q - 1.5

VIKING 2 FLT (CIF)

Figure 4.46a

09/23/75

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM

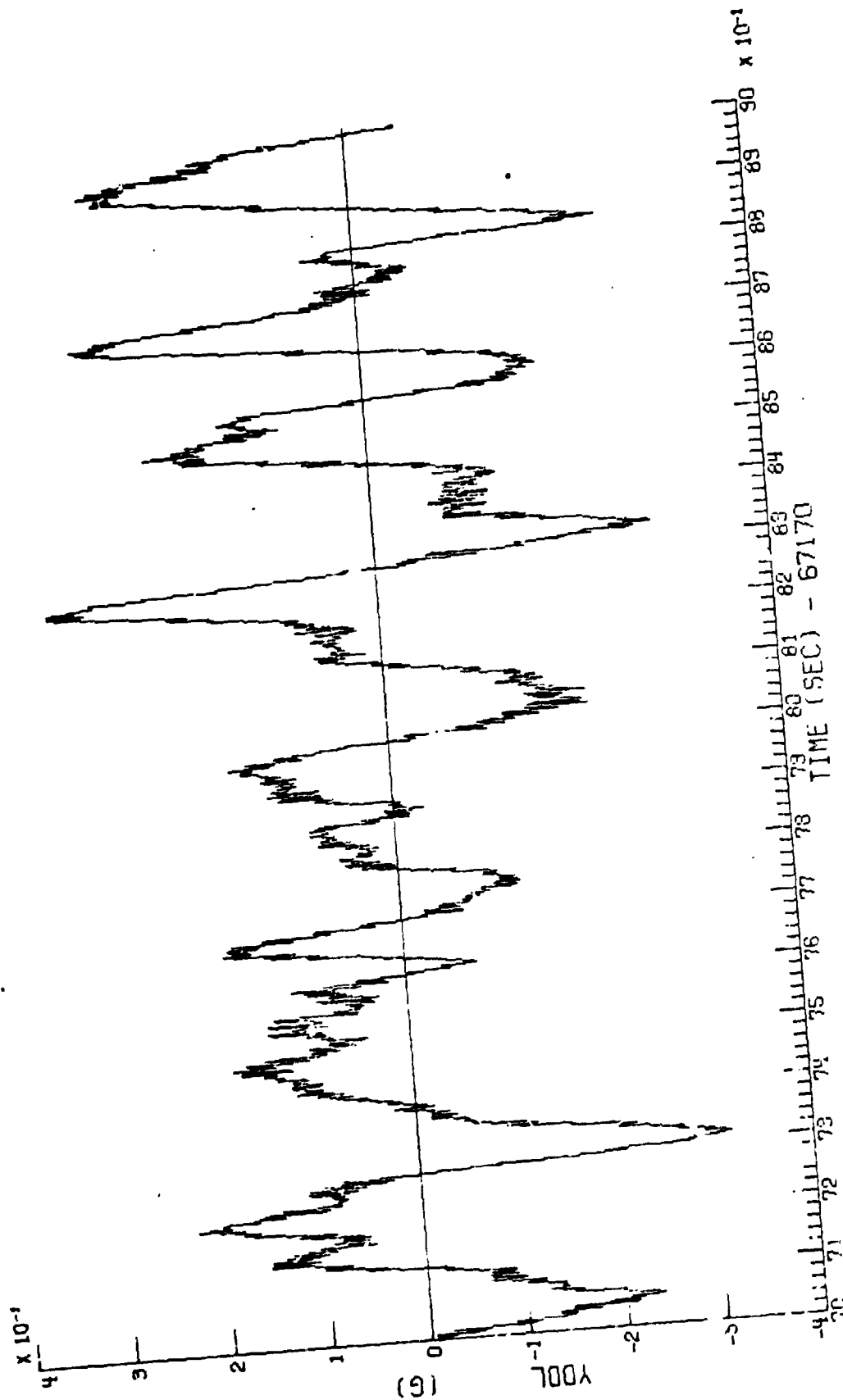


$\Delta F = .500$       START = 67177.000 SEC      STCP = 67178.999 SEC  
 MEAN =  $73566 \times 10^{-6}$        $\sigma^2 = 23273 \times 10^{-3}$        $\sigma = 15255 \times 10^{-3}$        $3\sigma = 45766 \times 10^{-5}$

VIKING B FLT (CIP)      MAX 0 - 1.5      XDDL  
 Figure 4.46b



# TIME HISTORY



MIN = -.317

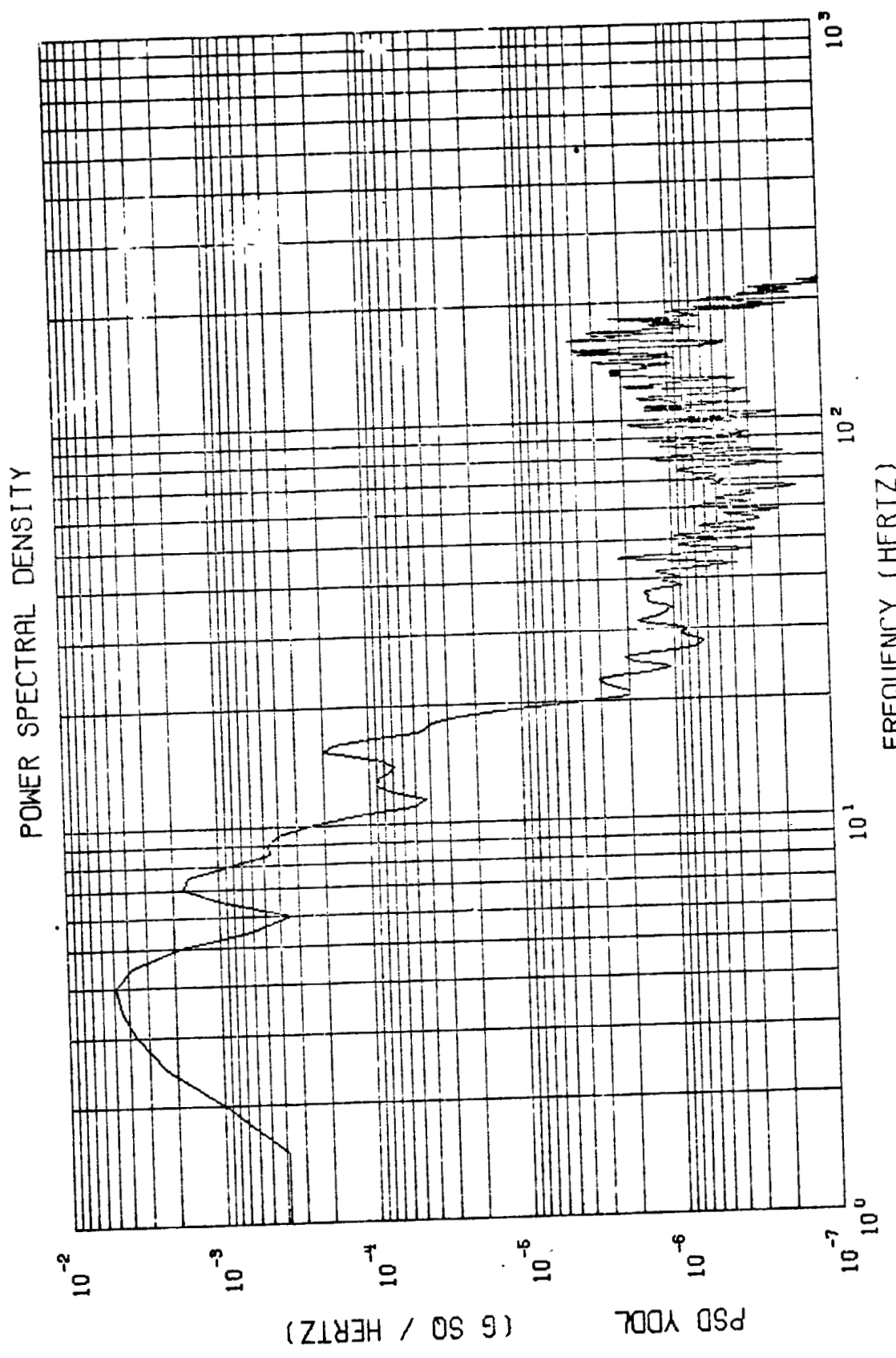
MAX = .335

YDDL  
Figure 4.47a

MAX 0 - 1.5

VIKING 8 FLT (CIF).

0-2



$\Delta F = .500$   
 $MEAN = 15543 \times 10^{-5}$      $\sigma^2 = 16346 \times 10^{-8}$      $\sigma = 12785 \times 10^{-5}$      $3\sigma = 38355 \times 10^{-5}$   
 $START = 67177.000 \text{ SEC}$      $STOP = 67178.999 \text{ SEC}$   
 VIKING B FLT (CIF)    MAX 0 - 1.5    YDDL

Figure 4.47b

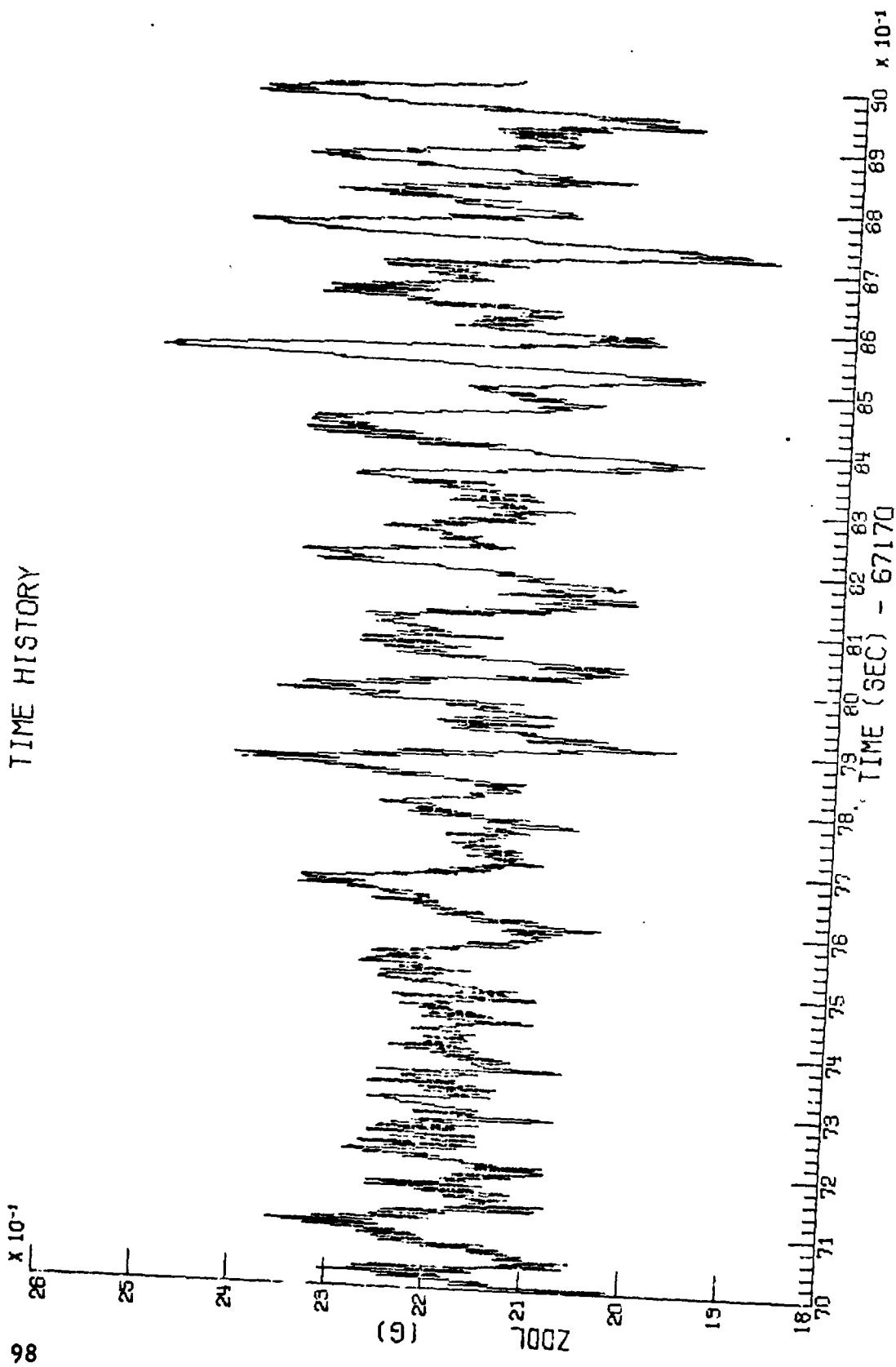
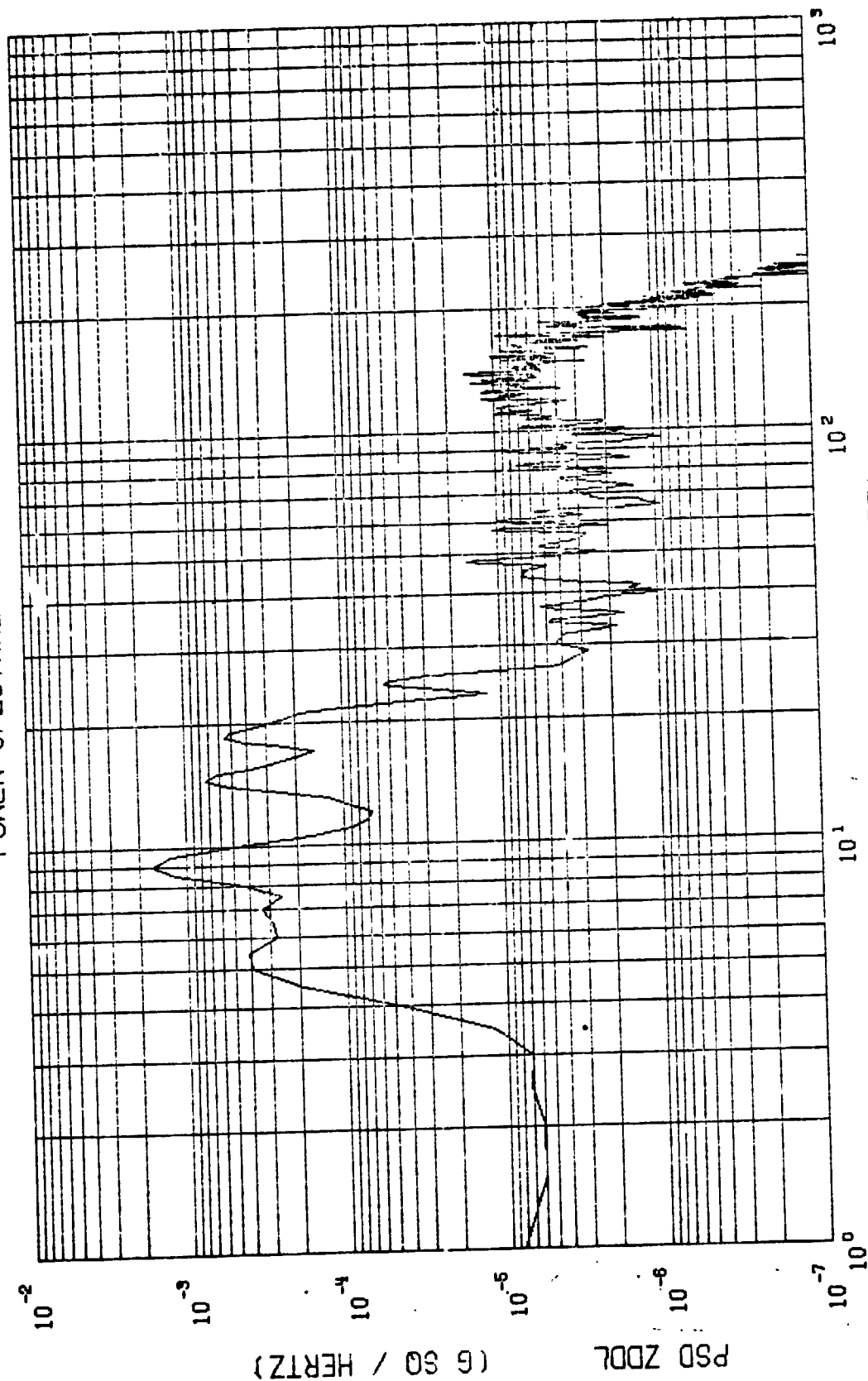


Figure 4.48a

# POWER SPECTRAL DENSITY



START = 67177.000 SEC STOP = 67176.999 SEC

$\Delta F = .500$

MEAN =  $21819 \times 10^{-4}$

$\sigma^2 = 79151 \times 10^{-7}$

$\sigma = 88967 \times 10^{-5}$

$3\sigma = 26689 \times 10^{-4}$

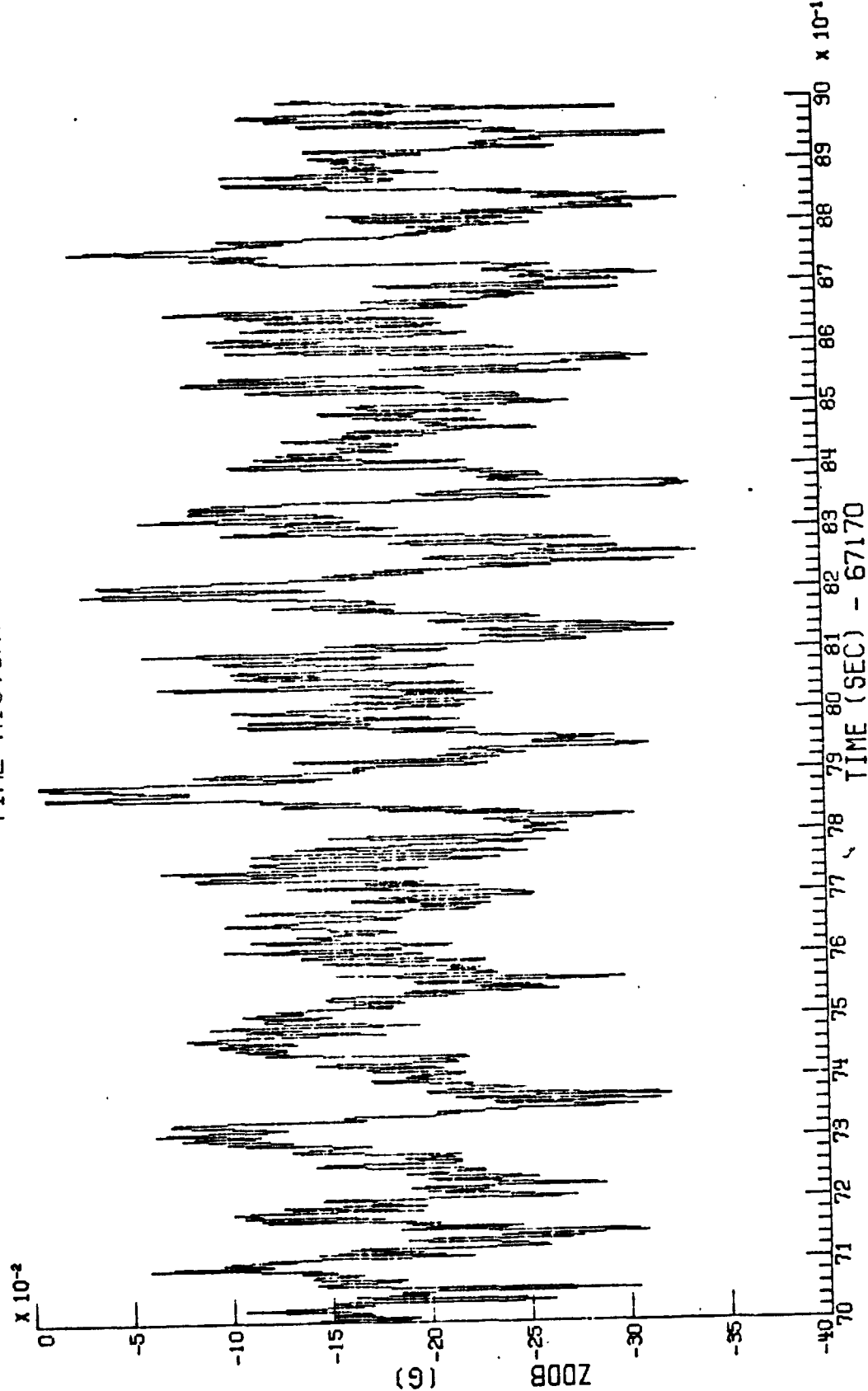
VIKING B FLT (CIF)

MAX Q - 1.5

ZDDL

Figure 4.48b

# TIME HISTORY



MIN = -.337

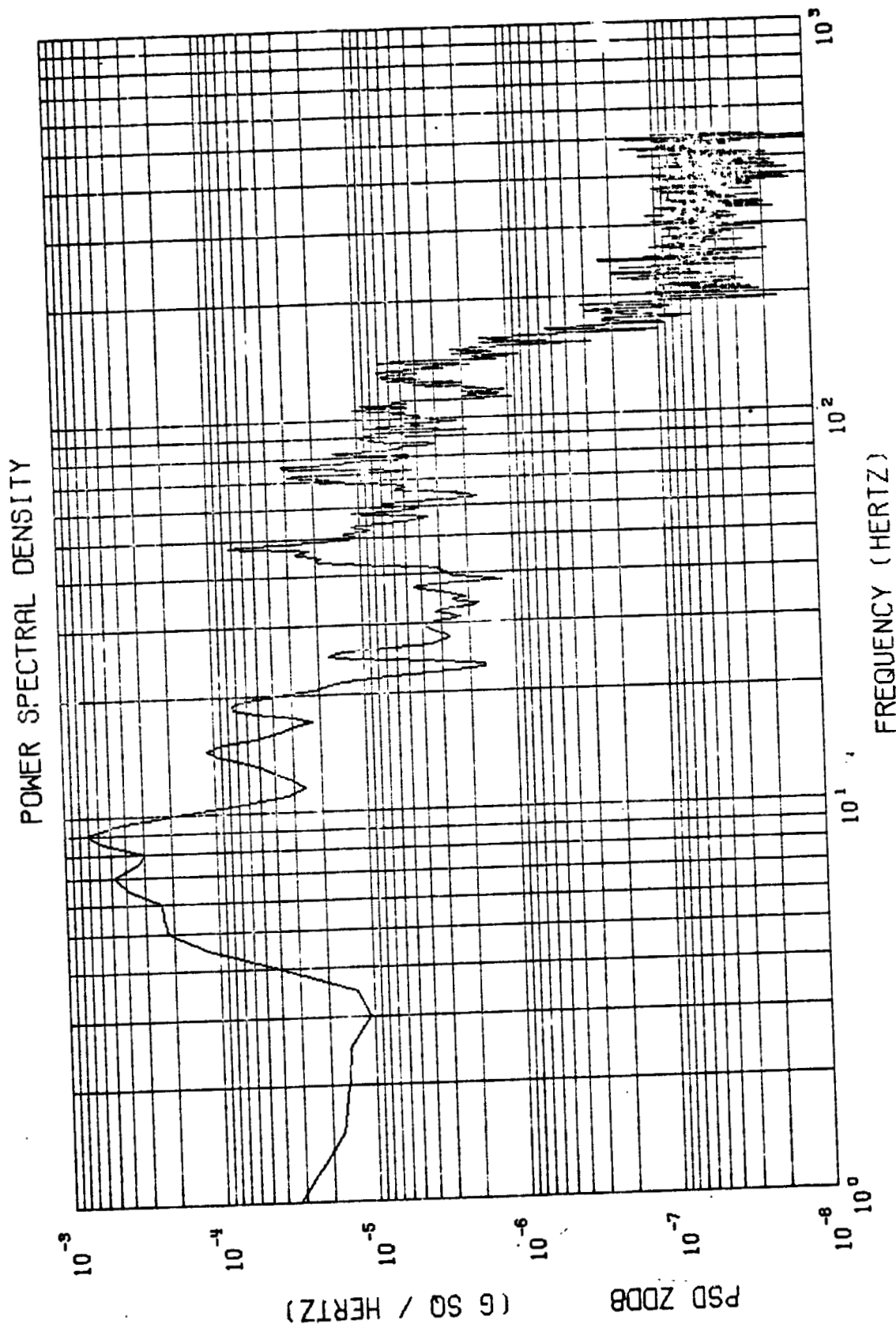
MAX = -.006

Z00B

MAX 0 -- 1.5

VIKING B FLT (CIF)

Figure 4.49a



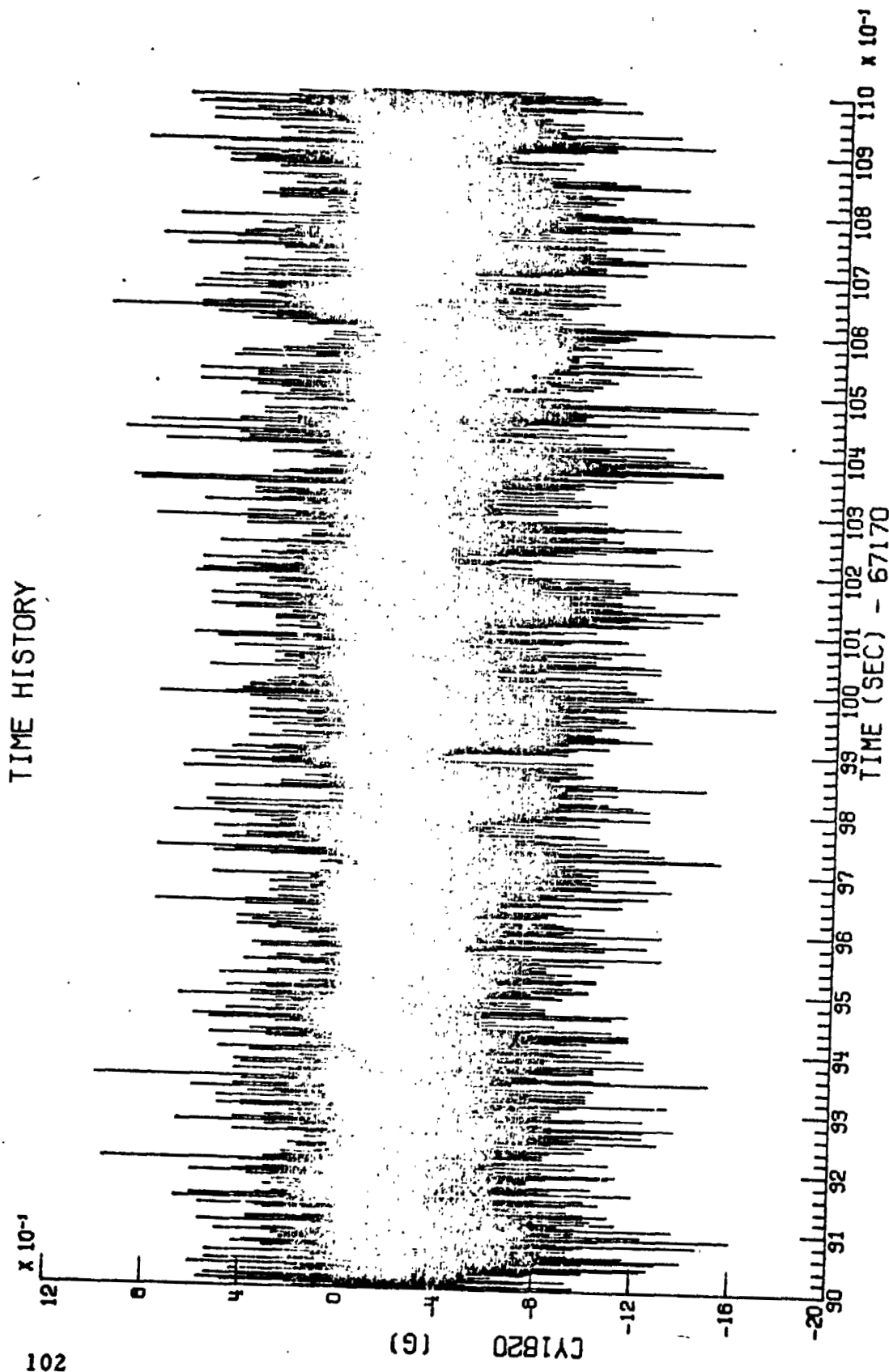
$\Delta F = .500$   
 $MEAN = -1848 \times 10^{-4}$   
 $\sigma^2 = 37301 \times 10^{-7}$   
 $\sigma = 61074 \times 10^{-5}$   
 $3\sigma = 18322 \times 10^{-5}$

Z008  
 Figure 4.49b

MAX Q - 1.5

VIKING B FLT (CIF)

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MAX = 1.000

MIN = -1.734

VIKING B FLT (CIF)

MAX Q - 2

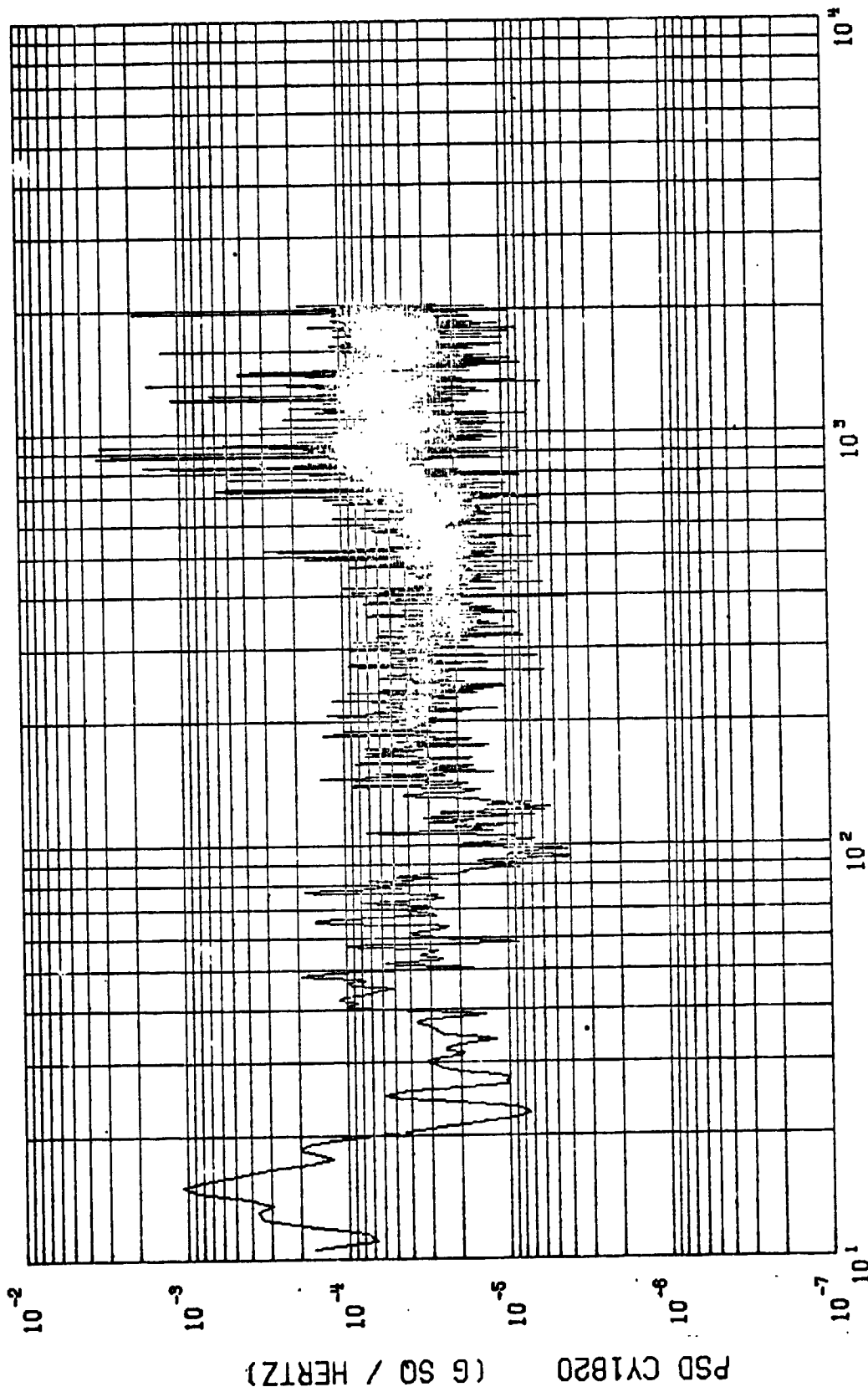
4096 SPS

CY1820

NSA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.50

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$   
 $\text{MEAN} = -30376 \times 10^{-3}$   
 $\sigma^2 = 12865 \times 10^{-3}$   
 $\sigma = 35868 \times 10^{-3}$   
 $3\sigma = 1076 \times 10^{-3}$

START = 67179.000 SEC

STOP = 67180.999 SEC

VIKING B FLT (CIF)

MAX Q - 2

CY1820

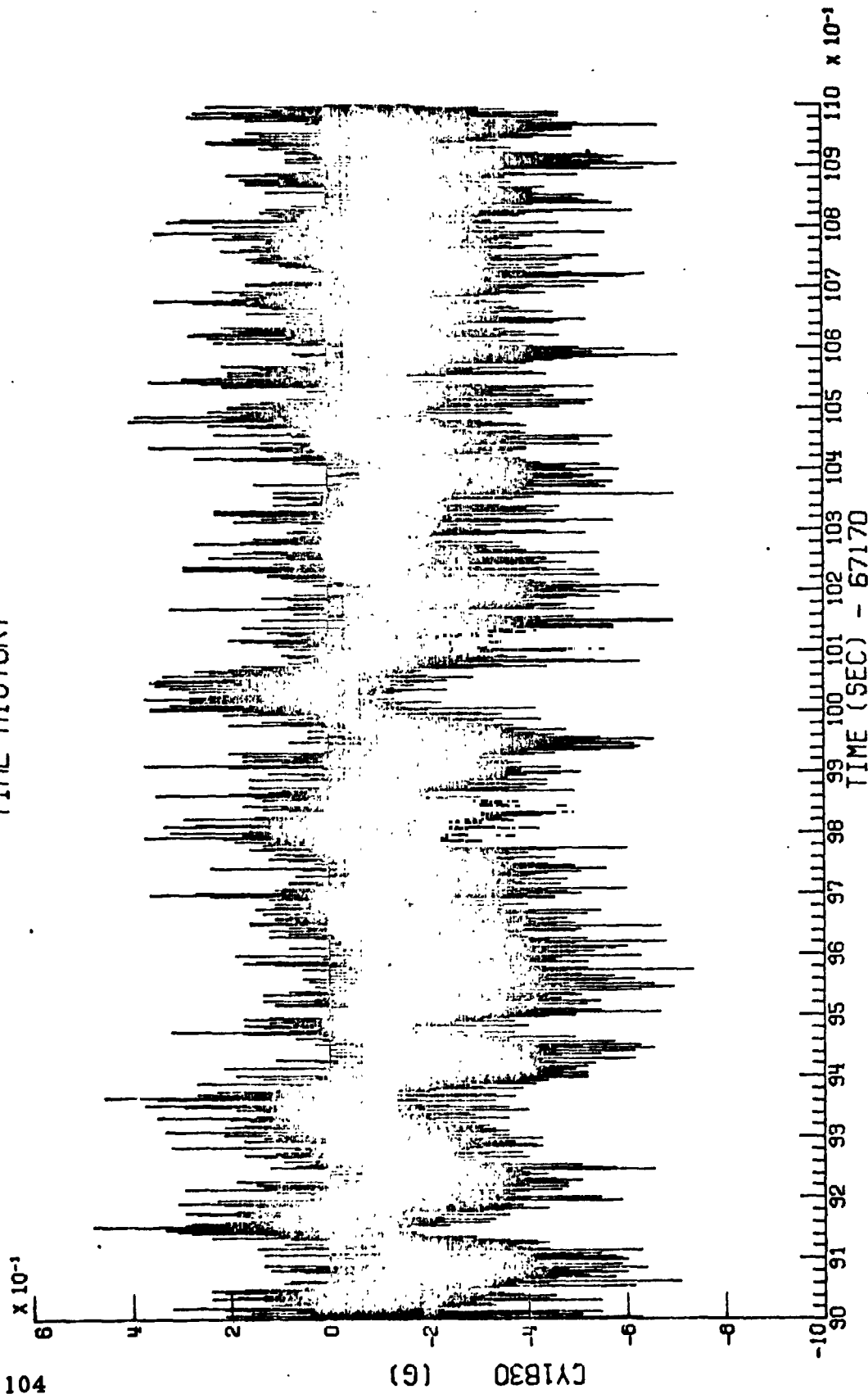
4096 SPS

Figure 4.50b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75



# TIME HISTORY



MIN = -.734

MAX = .480

CY1830

MAX Q - 2

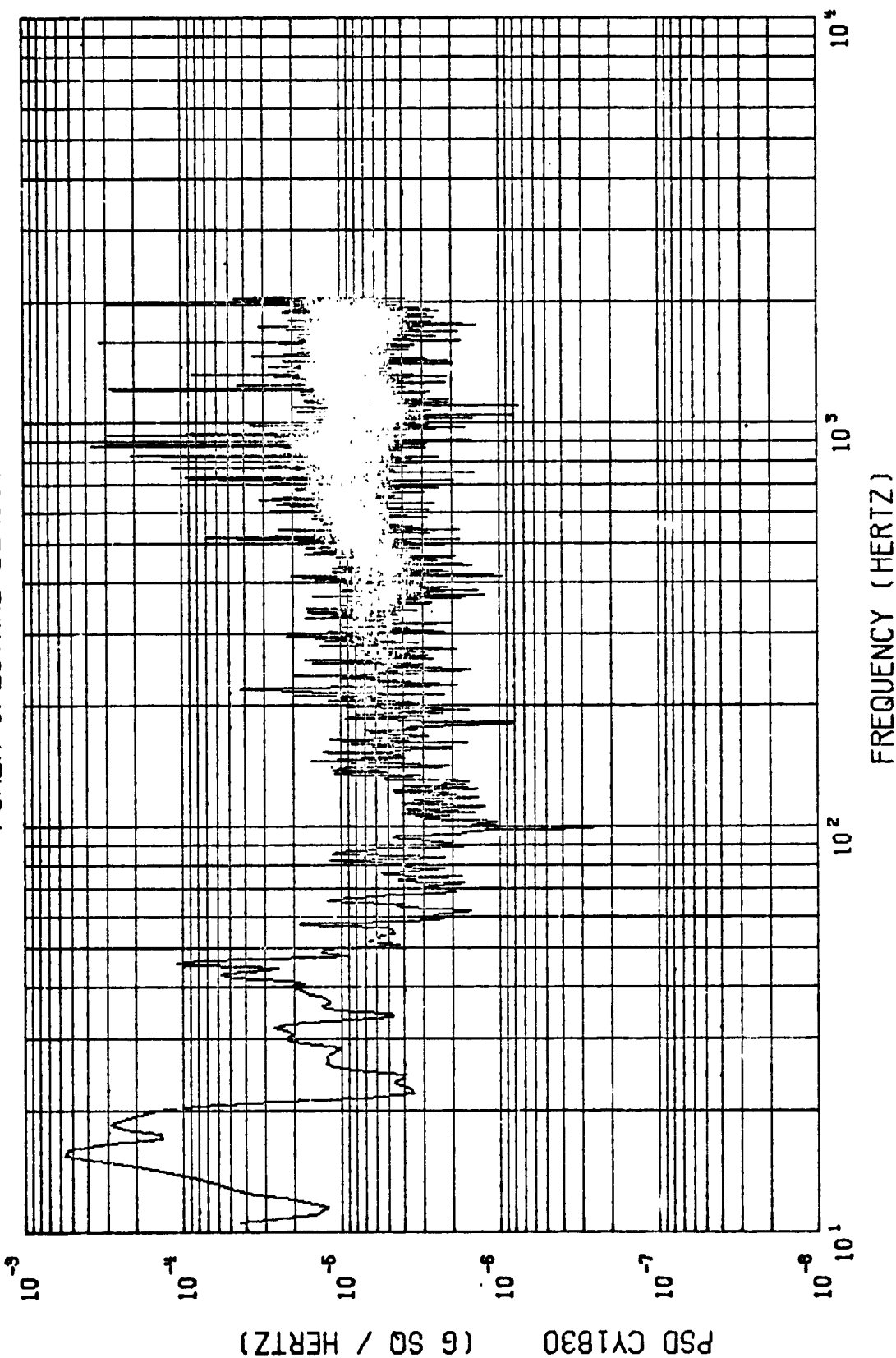
VIKING B FLT (CIF)

Figure 4.51a

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $\text{MEAN} = -13737 \times 10^{-5}$   
 $\sigma^2 = 27973 \times 10^{-5}$

$\text{START} = 67179.000 \text{ SEC}$   
 $\sigma = 16725 \times 10^{-5}$

$\text{STOP} = 67180.999 \text{ SEC}$   
 $3\sigma = 50175 \times 10^{-5}$

CY1830

MAX Q - 2

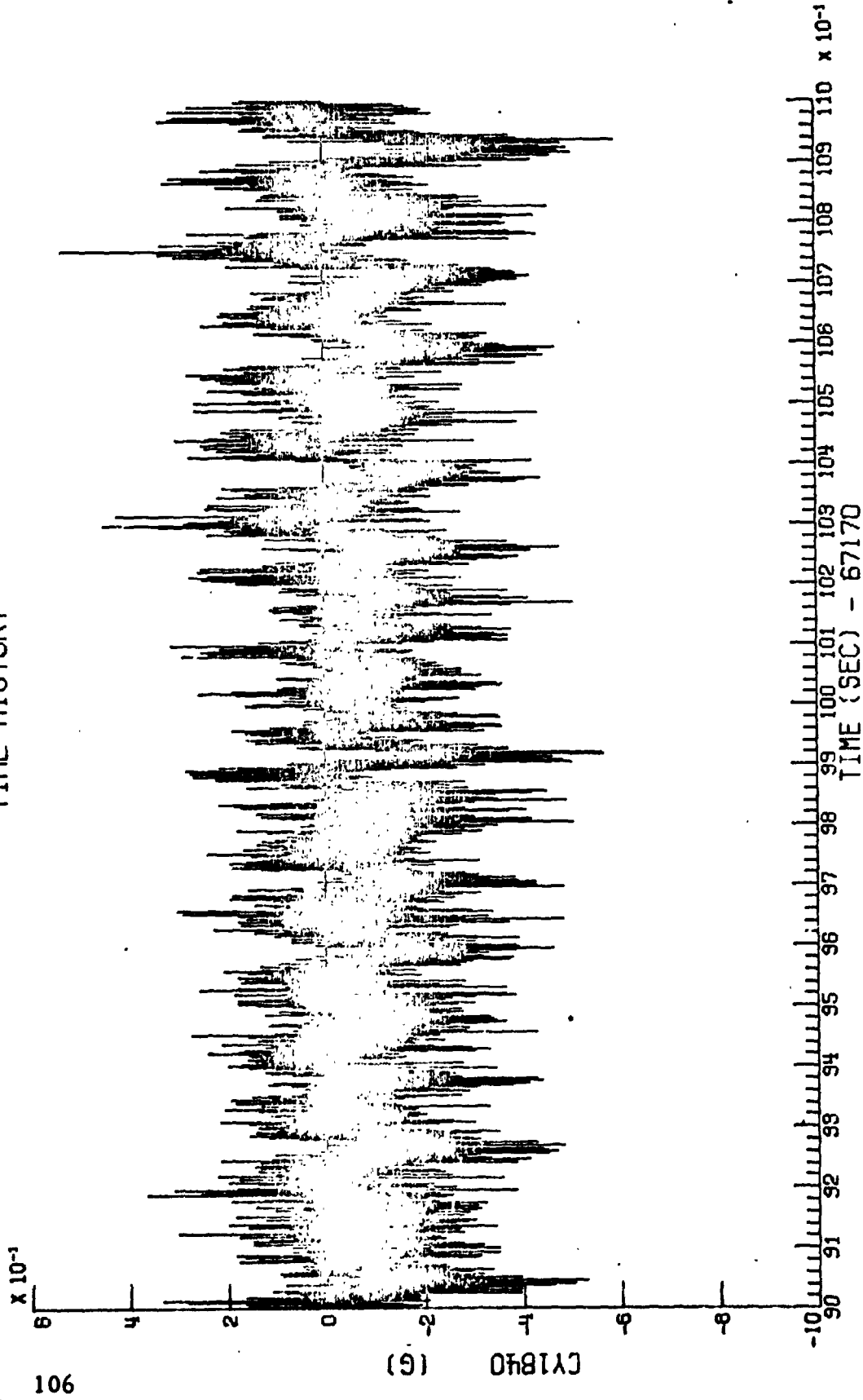
VIKING B FLT (CIF)

Figure 4.51b

4000 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY



MAX = .533

MIN = -.589

VIKING B FLT (CIF)

MAX Q - 2

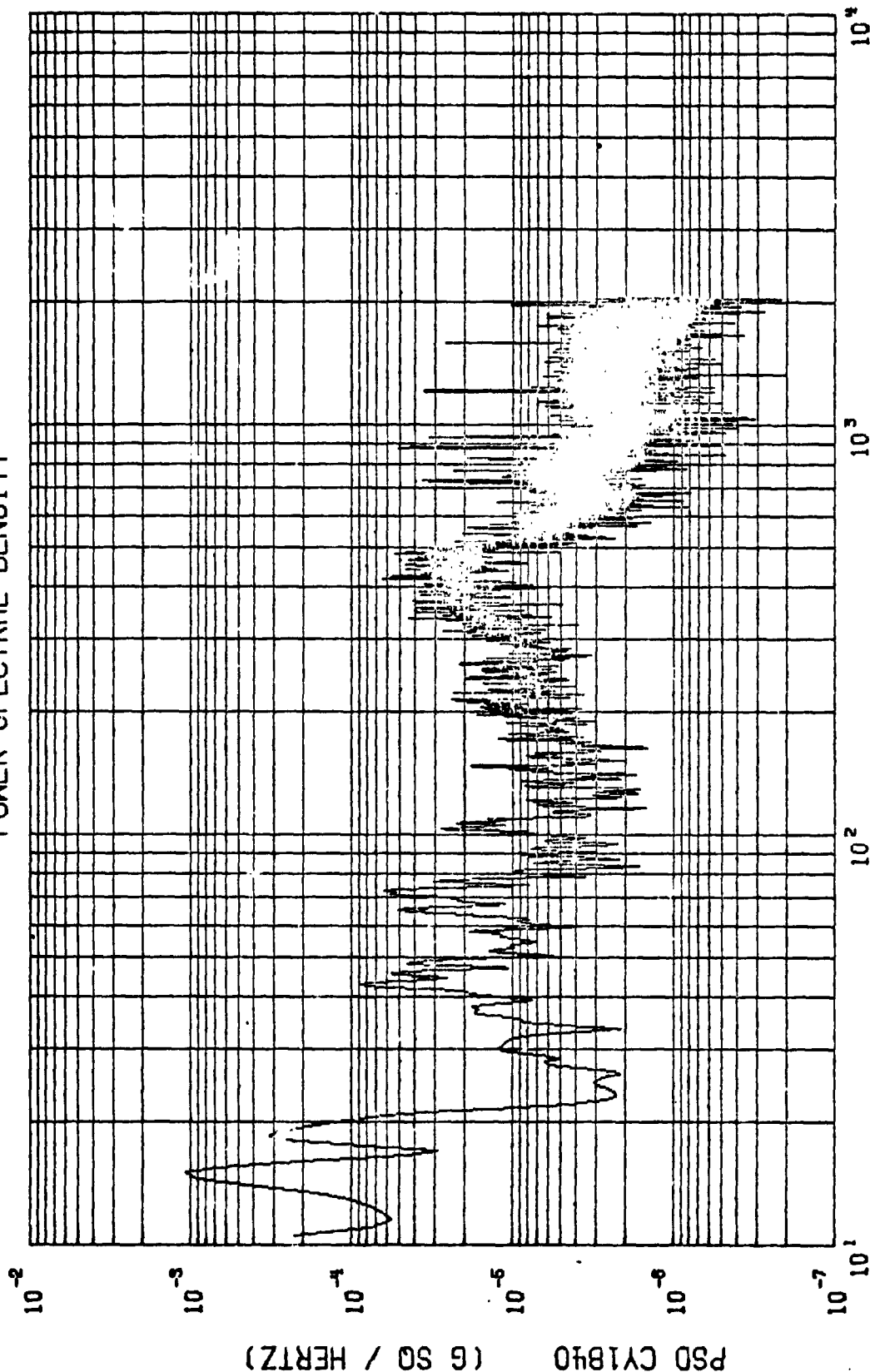
4096 SP S

CY1840

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.52a

# POWER SPECTRAL DENSITY



$\Delta F = .499$

START =  $67179.000 \text{ SEC}$

STOP =  $67180.999 \text{ SEC}$

MEAN =  $-73582 \times 10^{-6}$

$\sigma^2 = 19222 \times 10^{-6}$

$\sigma = 13864 \times 10^{-3}$

$3\sigma = 41593 \times 10^{-3}$

VIKING B FLT (CIF)

MAX Q - 2

CY1840

4096 SPS

Figure 1.52b

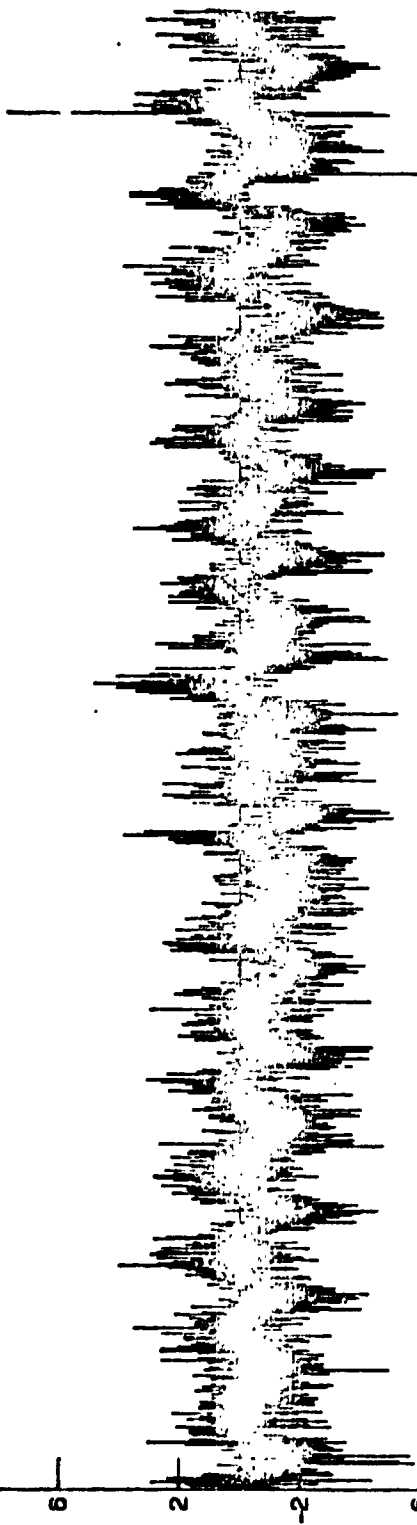
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY

22  
18  
14  
10  
6  
2  
-2  
-6  
-10

108

(G) CY1850



90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110  $\times 10^{-3}$   
TIME (SEC) - 67170

MAX = .767

MIN = -.611

VIKING B FLT (CIF)

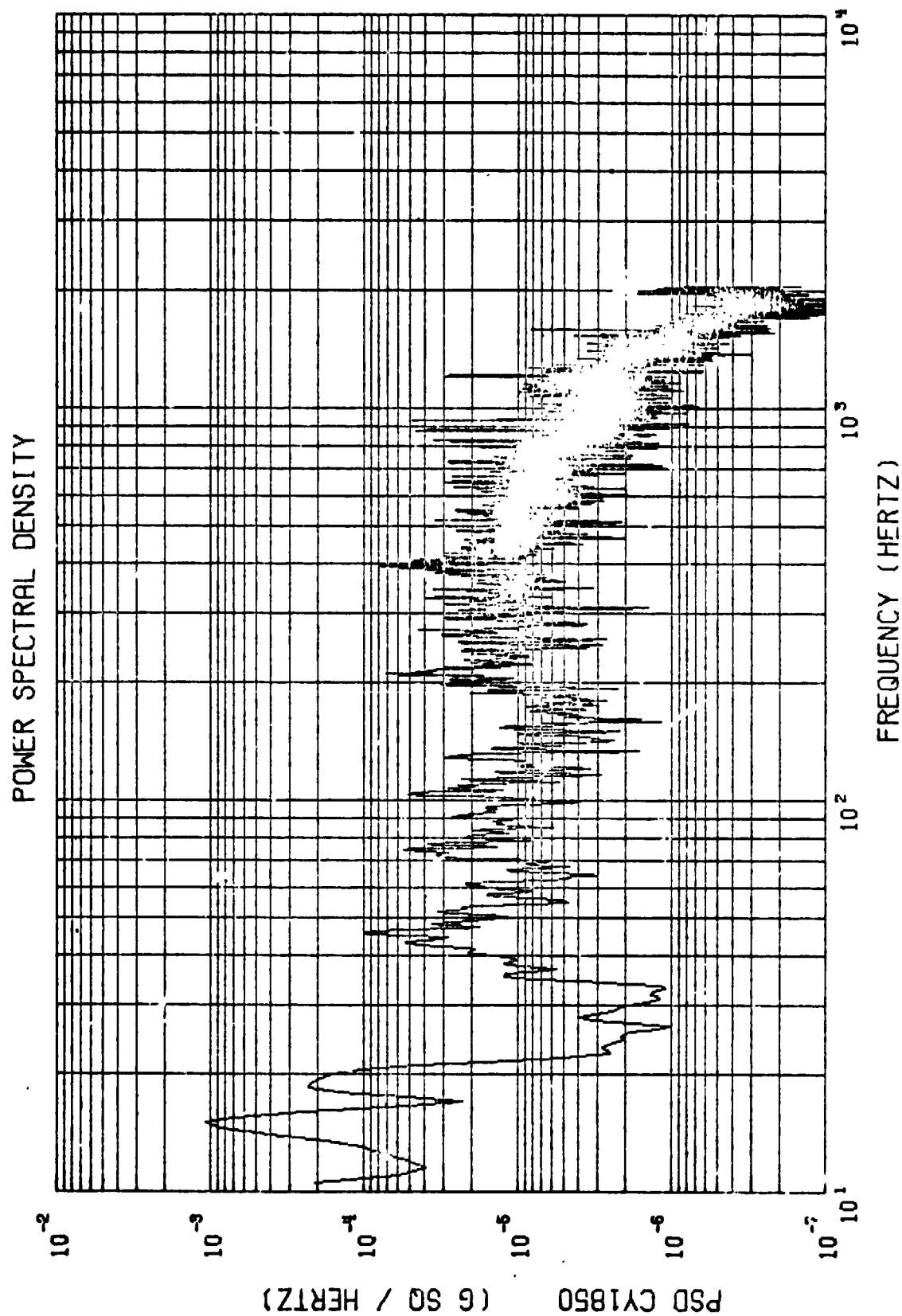
MAX 0 - 2

CY1850

4096 SPS

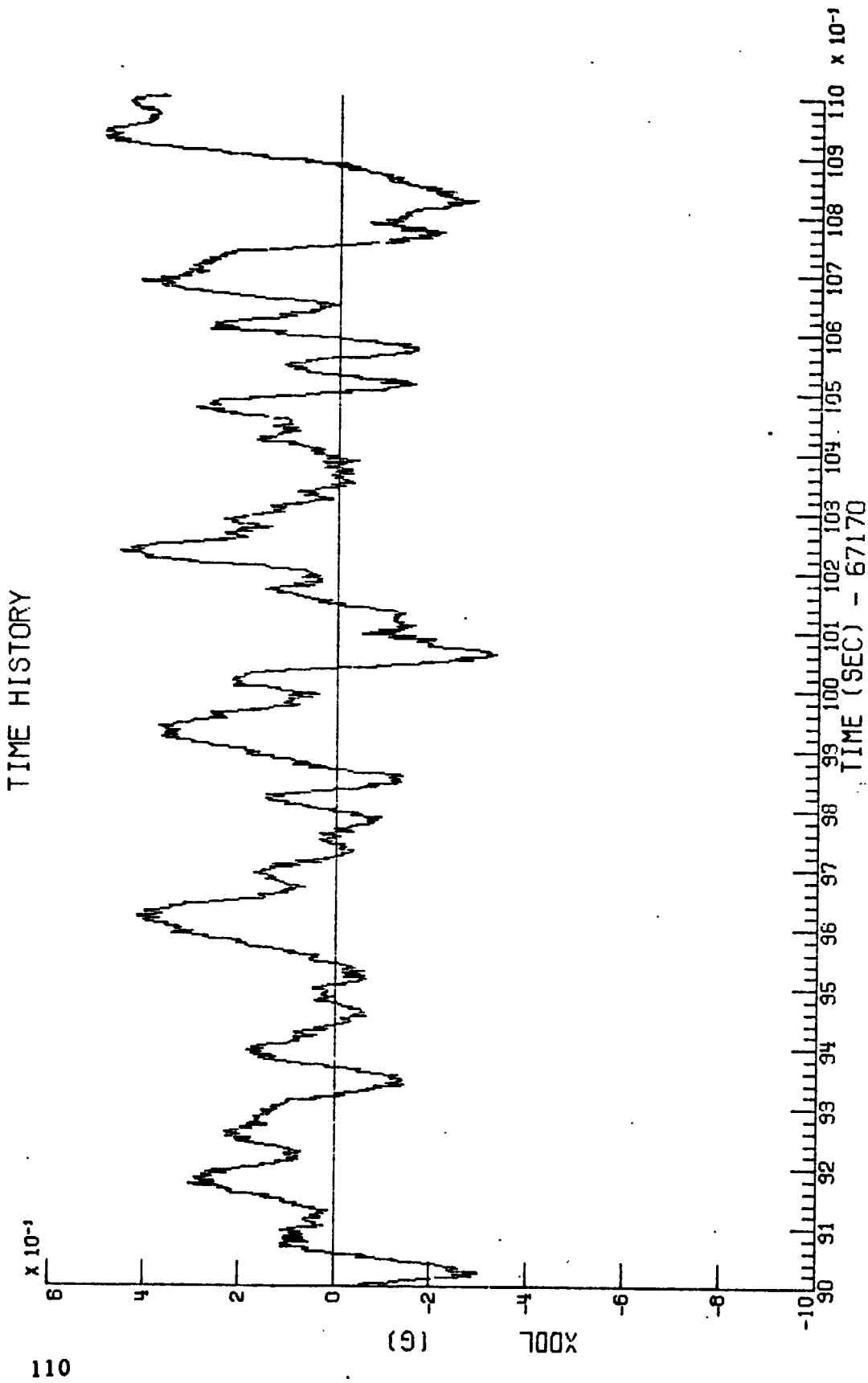
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.53a



CY1850

Figure 4.53b



MAX = .492

MIN = -.331

VIKING B FLT (CIF)

MAX 0 - 2

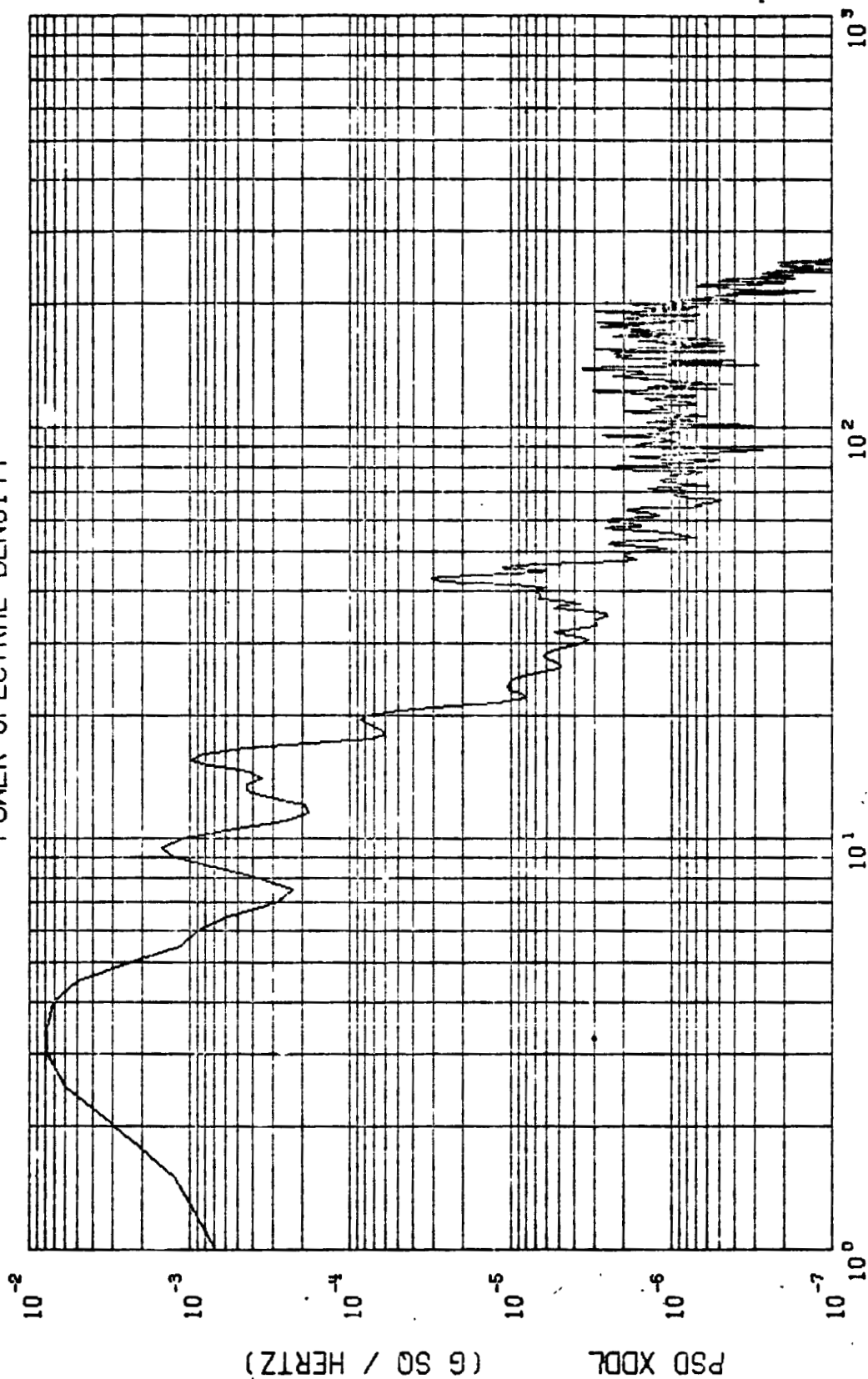
XDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM

09/23/75

Figure 4.54a

# POWER SPECTRAL DENSITY



$\Delta F = .500$

START =  $67179.000 \text{ SEC}$

STOP =  $67180.999 \text{ SEC}$

MEAN =  $85743 \times 10^{-5}$

$\sigma^2 = 28602 \times 10^{-5}$

$\sigma = 16912 \times 10^{-5}$

$3\sigma = 50737 \times 10^{-5}$

VIKING B FLT (CIF)

MAX 0 - 2

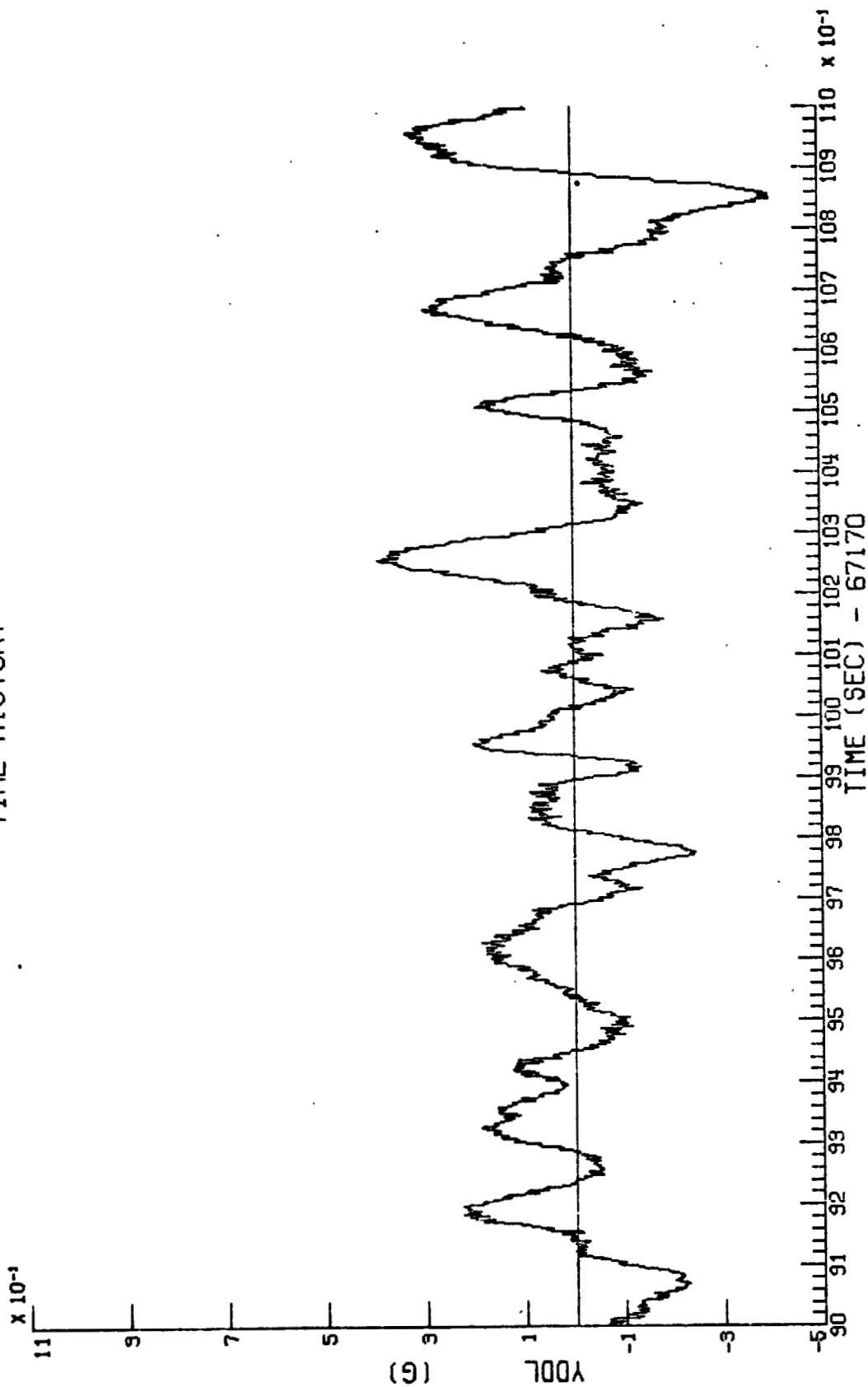
XDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.54b



# TIME HISTORY



MAX = .390

MIN = -.402

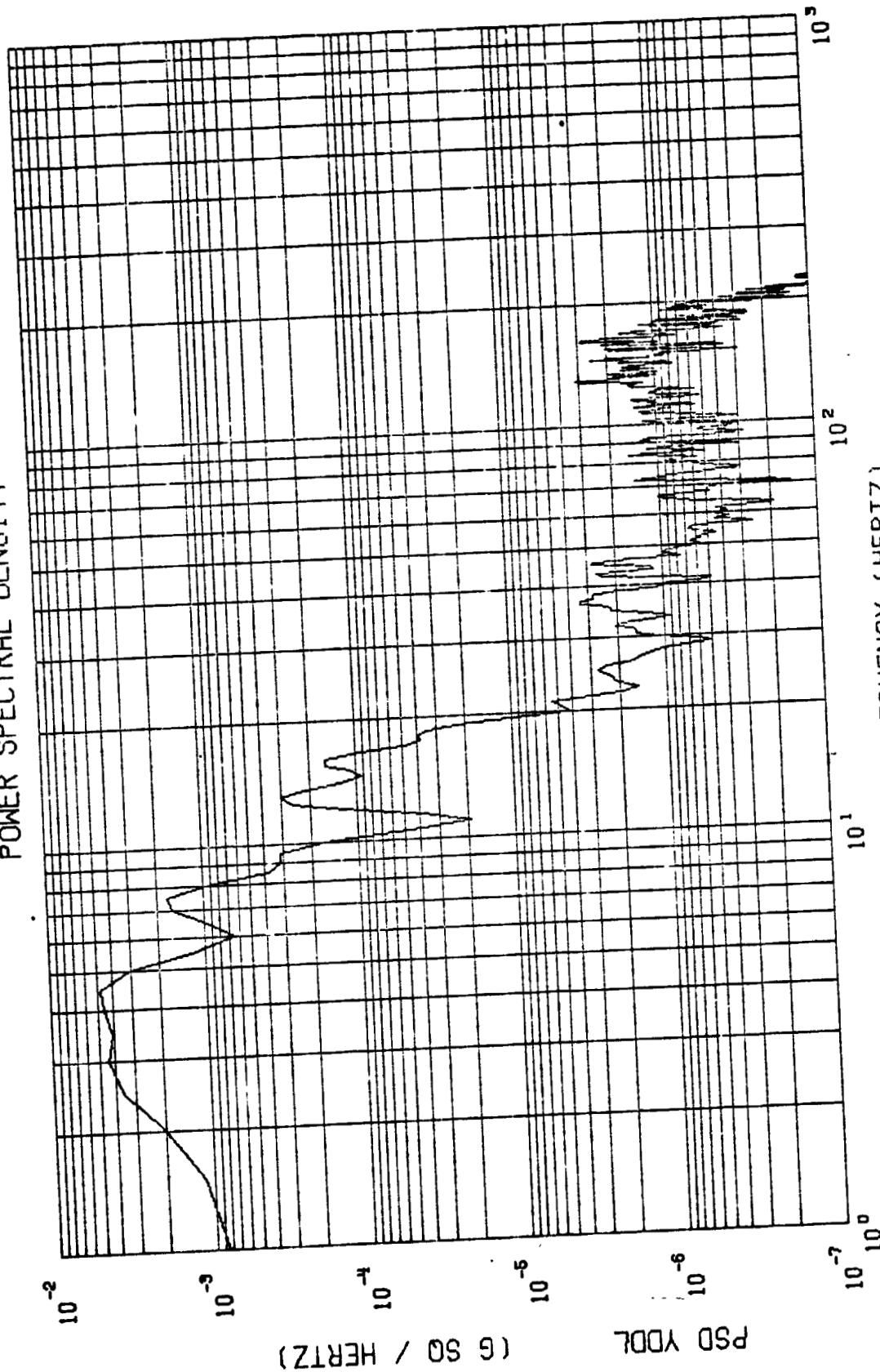
VIKING B FLT (CIF)

MAX Q - 2

YDDL

Figure 4.55a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

STOP = 67180.993 SEC

START = 67179.000 SEC

$\sigma = 14079 \times 10^{-5}$

$\sigma = 19822 \times 10^{-5}$

MEAN =  $12706 \times 10^{-6}$

$\Delta F = .500$

$3\sigma = 42237 \times 10^{-5}$

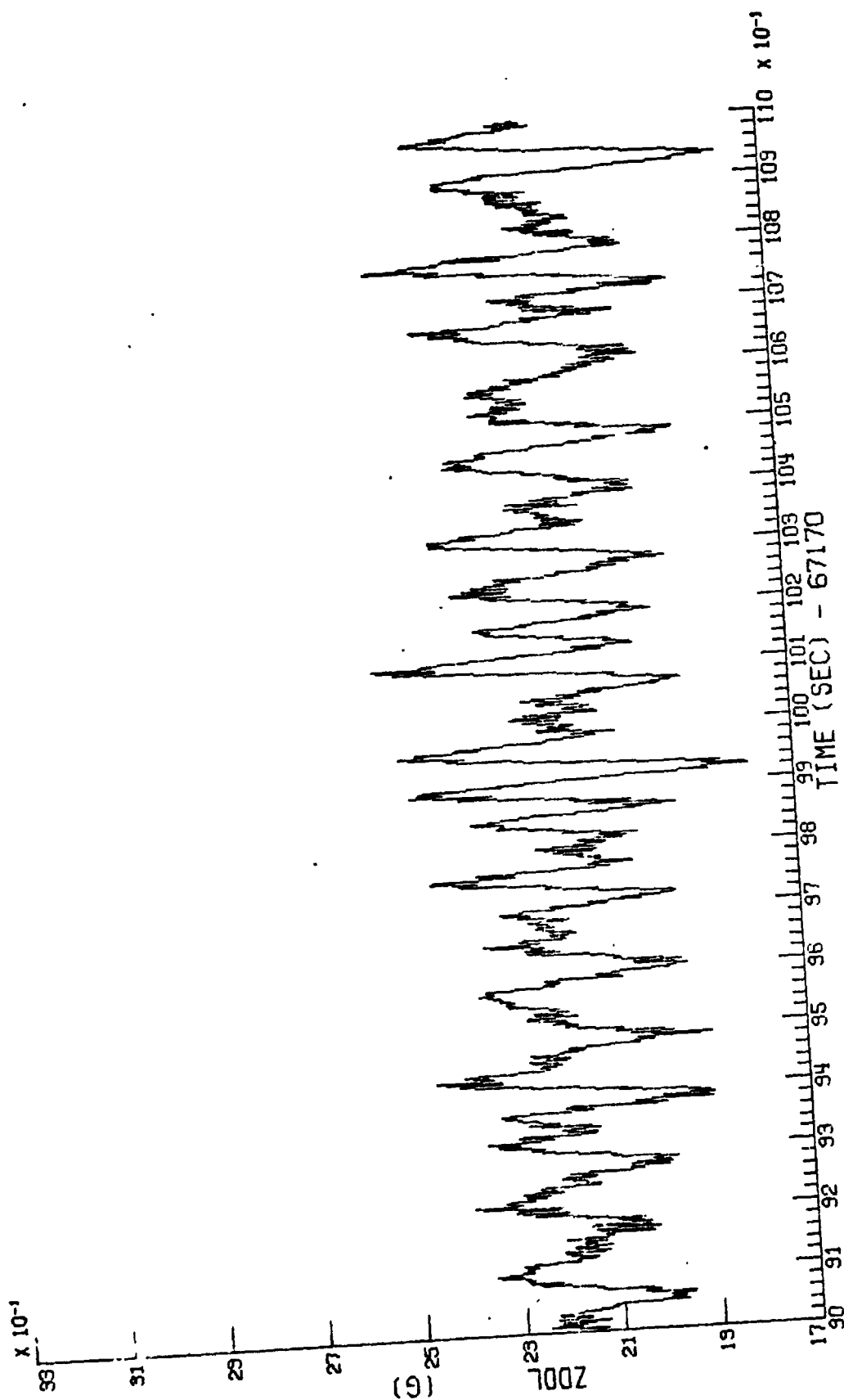
YDDL

MAX Q - 2

VIKING B FLT (CIF)

Figure 4.55b

# TIME HISTORY



MIN = 1.789

MAX = 2.540

ZDDL

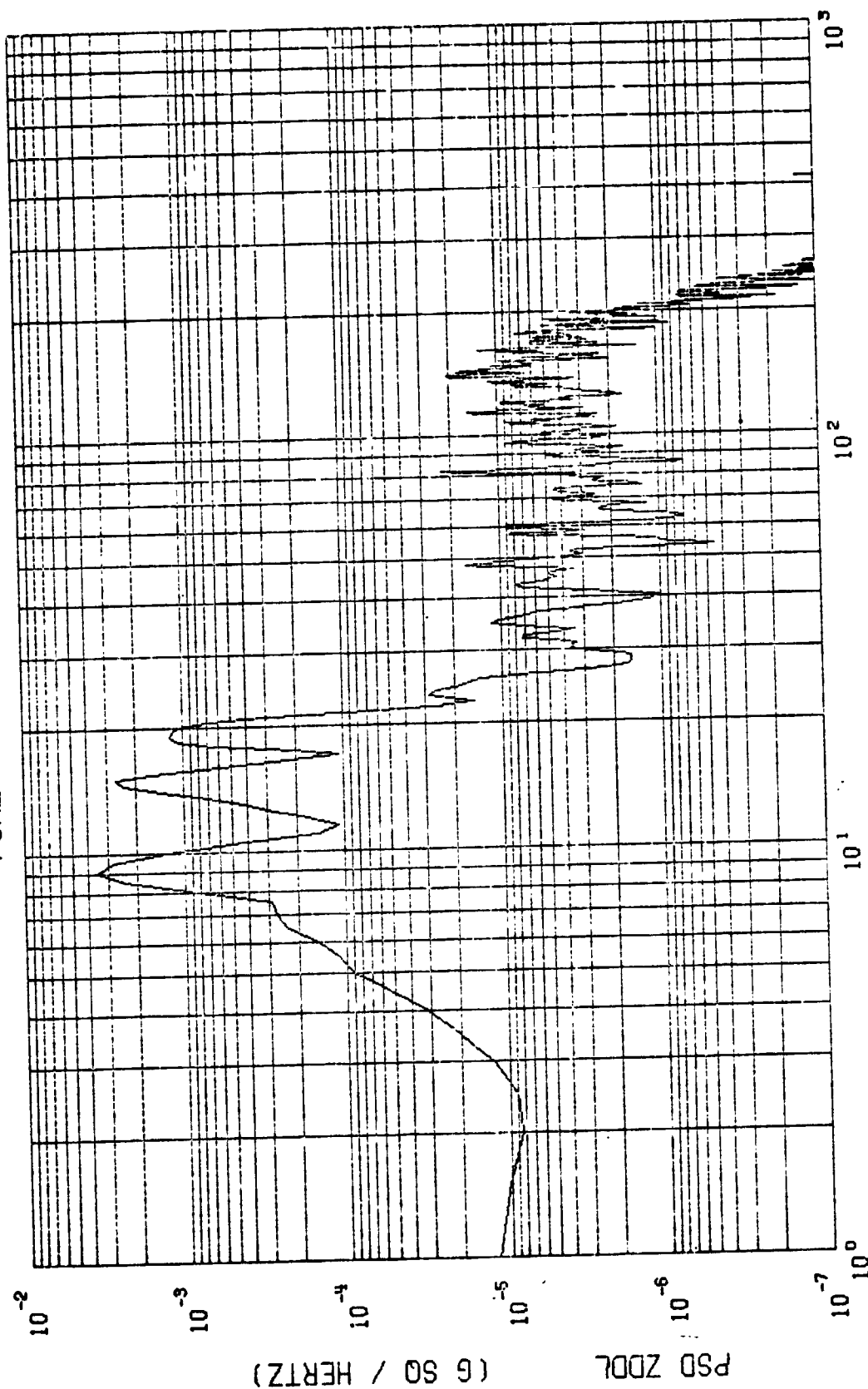
MAX Q - 2

Figure 4.56a

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# POWER SPECTRAL DENSITY



$\Delta F = .500$   
 $\text{MEAN} = 21778 \times 10^{-4}$   
 $\sigma^2 = 15822 \times 10^{-6}$   
 $\sigma = 12578 \times 10^{-5}$   
 $3\sigma = 37735 \times 10^{-5}$

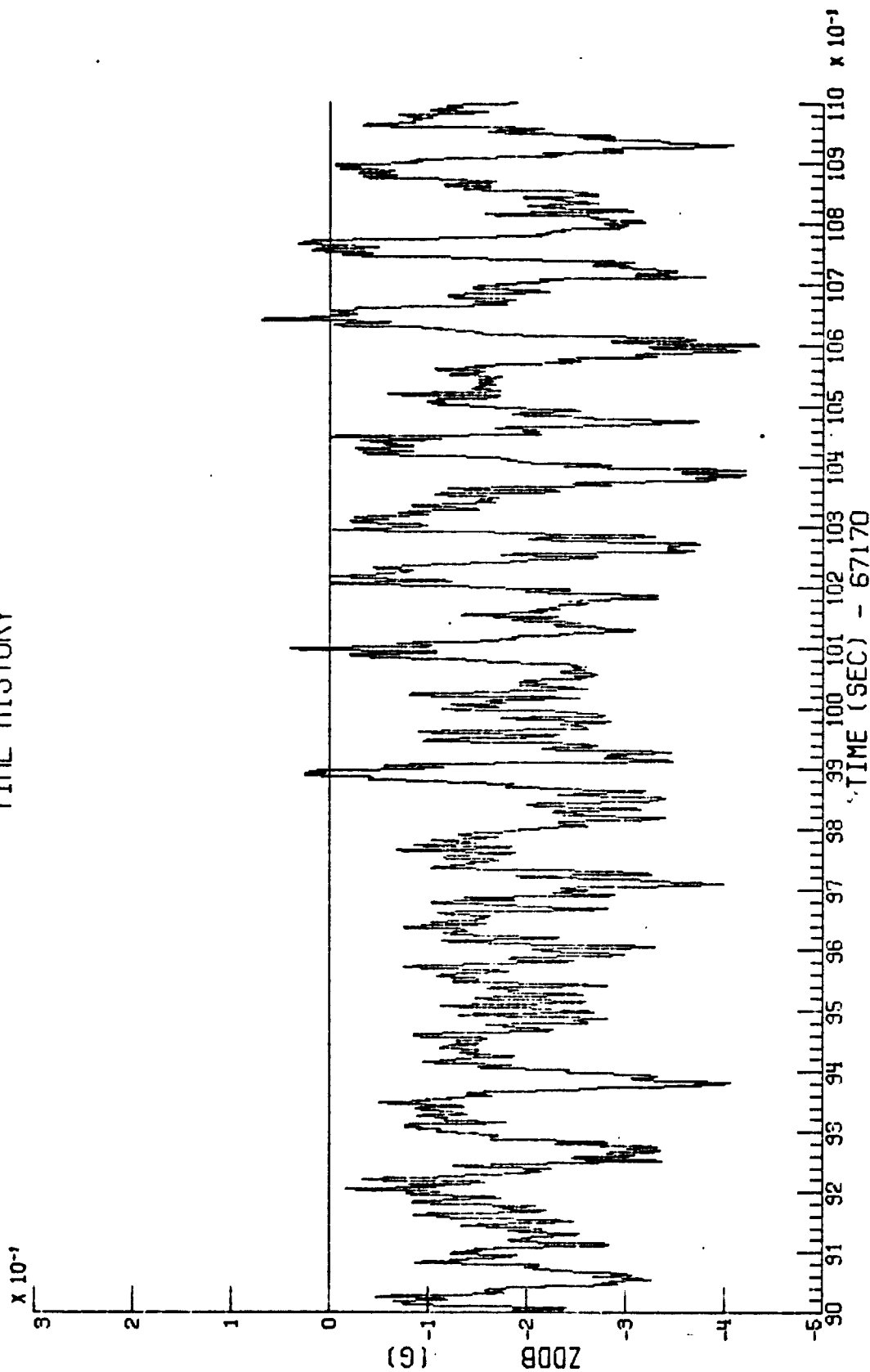
ZDOL  
Figure 4.56b

MAX 0 - 2

VIKING B FLT (CIF)

NSA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# TIME HISTORY



MAX = .068

MIN = -.434

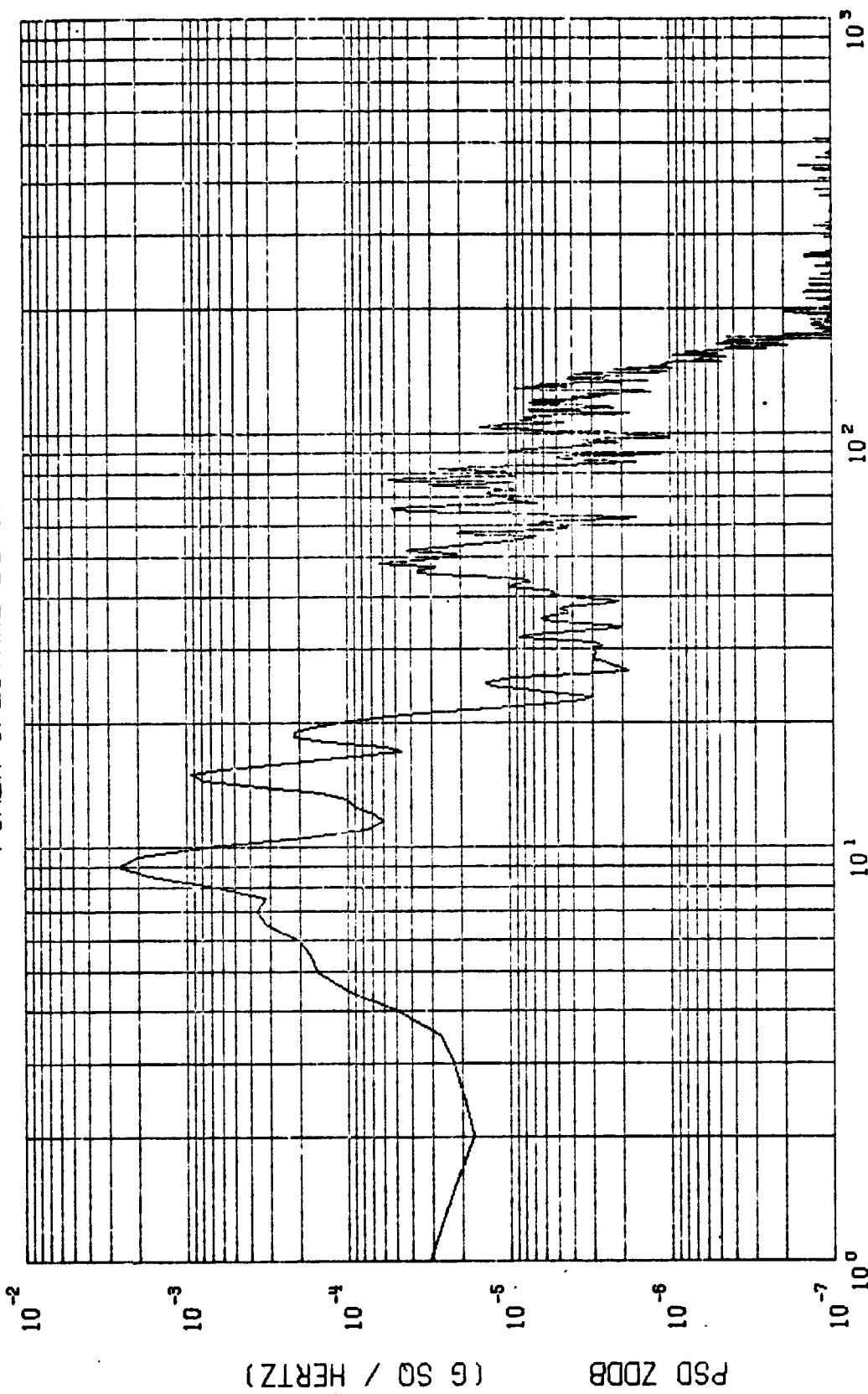
VIKING B FLT (CIF)

MAX 0 - 2

Z008

Figure 4.57a

# POWER SPECTRAL DENSITY



$\Delta F = .500$

START = 67179.000 SEC

STOP = 67180.999 SEC

MEAN =  $-1841 \times 10^{-4}$

$\sigma^2 = 83818 \times 10^{-7}$

$\sigma = 91552 \times 10^{-8}$

$3\sigma = 27465 \times 10^{-8}$

VIKING B FLT (CIF)

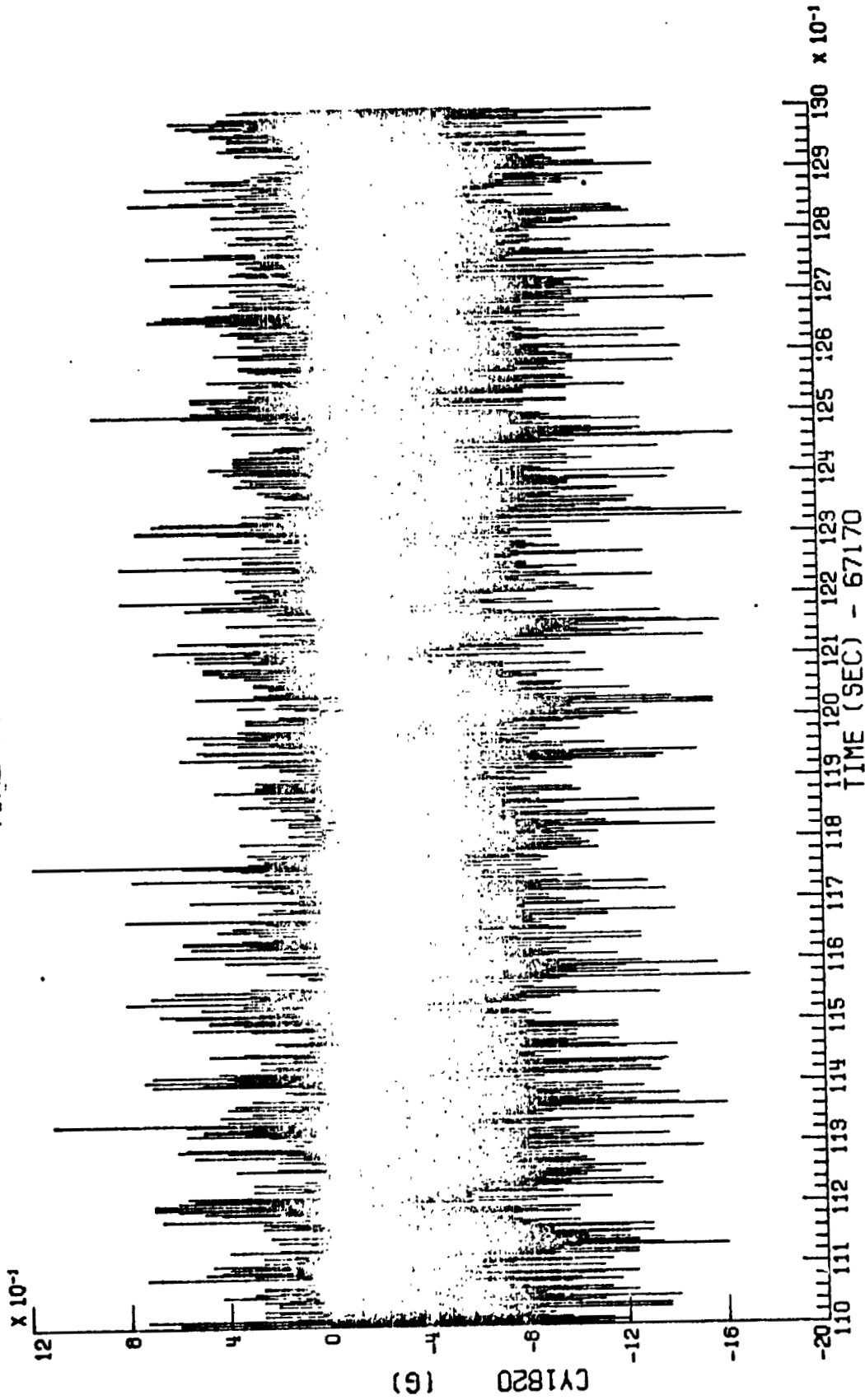
MAX 0 - 2

Z008

Figure 4.57b

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OF POOR QUALITY

TIME HISTORY



MAX = 1.167

MIN = -1.734

VIKING B FLT (CIF)

CY1820

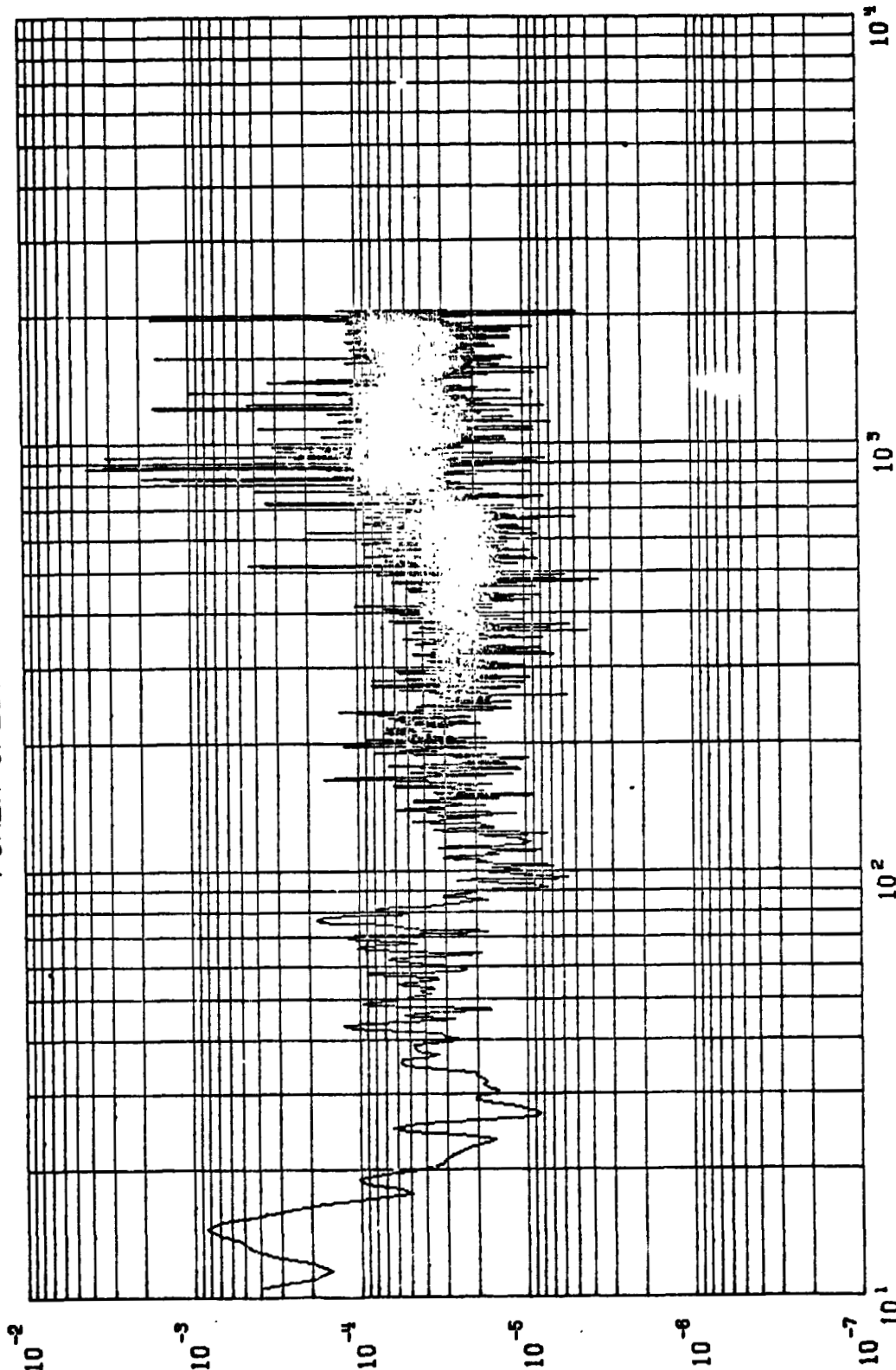
MAX 0 - 2.5

4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.58a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$       START = 67181.000 SEC      STOP = 67182.999 SEC  
 MEAN =  $-32259 \times 10^{-5}$        $\sigma^2 = 12886 \times 10^{-5}$        $\sigma = 35898 \times 10^{-5}$        $3\sigma = 10769 \times 10^{-5}$

CY1820

MAX Q - 2.5

VIKING B FLT (CIF)

4096 SPS

Figure 4.58b

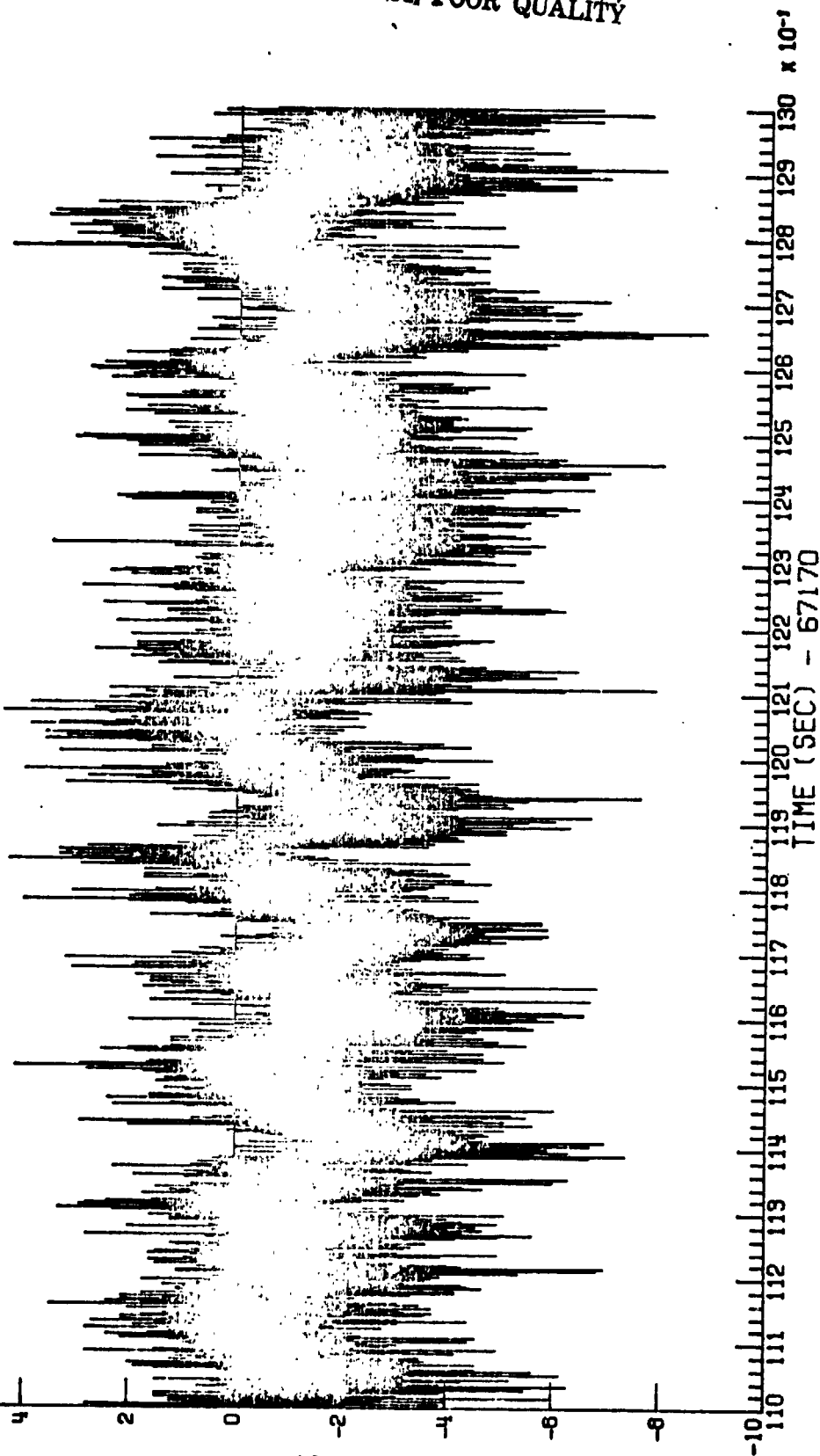
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75



# TIME HISTORY

120  
x 10<sup>-1</sup>

(G) CY1830



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OF POOR QUALITY

MAX = .440  
MIN = -.881

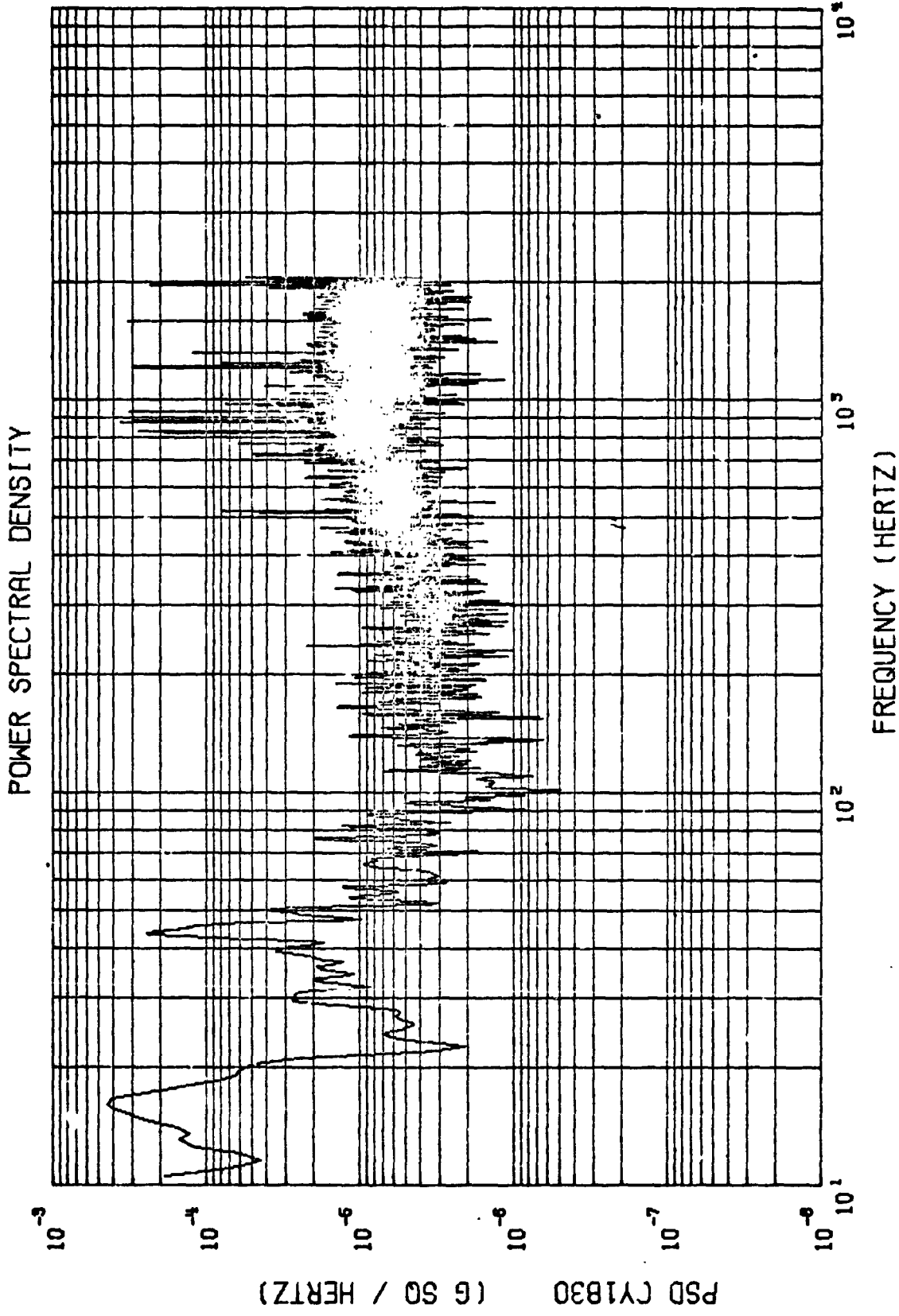
VIKING B FLT (CIF)

MAX Q - 2.5

4090 SPS

Figure 4.59a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75



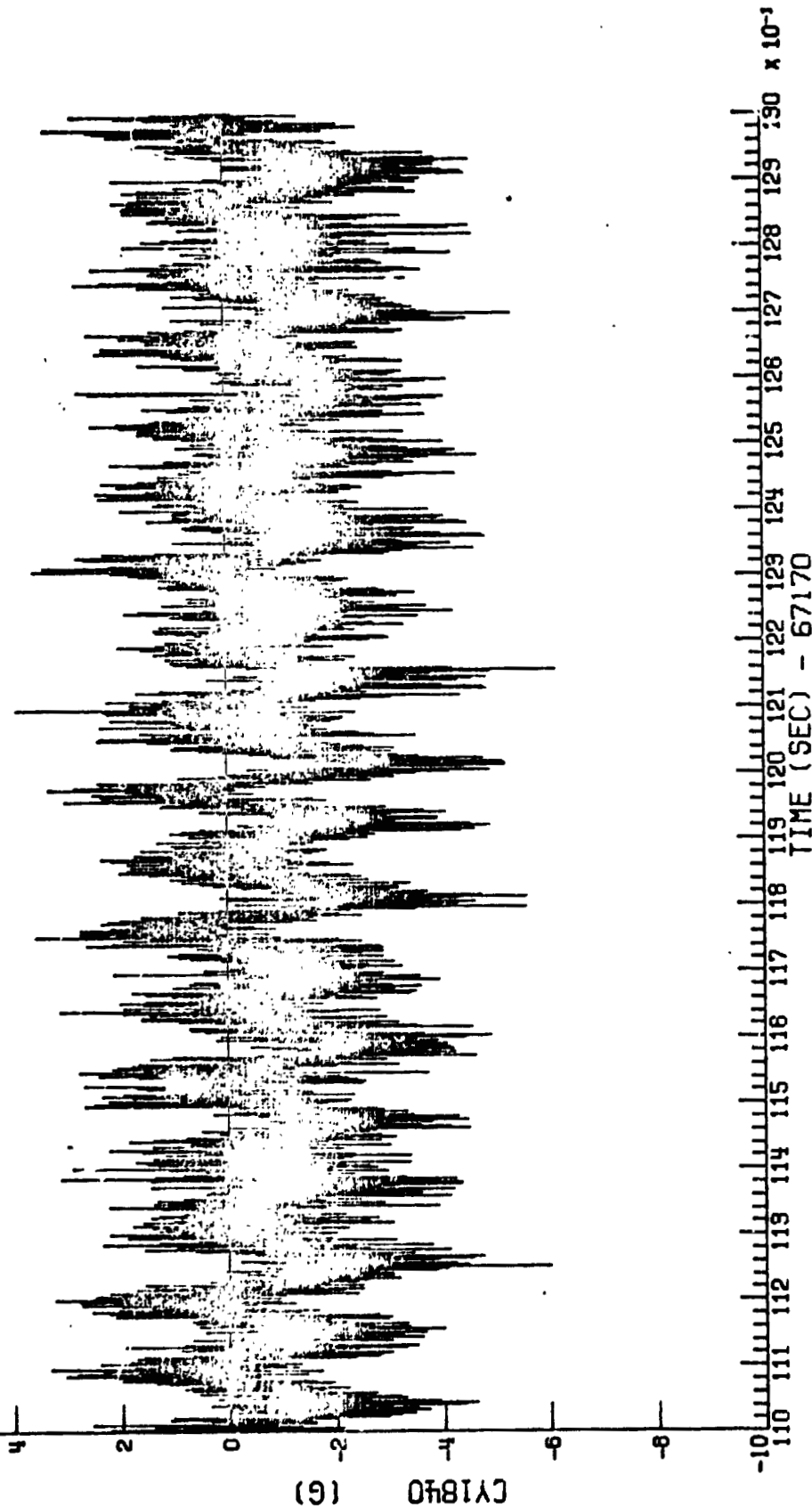
$\Delta F = .499$       START = 67181.000 SEC      STOP = 67182.999 SEC  
 MEAN =  $-14365 \times 10^{-9}$        $\sigma^2 = 29767 \times 10^{-8}$        $\sigma = 17263 \times 10^{-5}$        $3\sigma = 5176 \times 10^{-4}$

VIKING B FLT (CIF)      MAX Q - 2.5      CY1830  
 NASA-LANGLEY SIGNAL ANALYSIS PROGRAM      09/22/75      4096 SPS      Figure 4.59b

# TIME HISTORY

$\times 10^{-1}$

6



(G) 0781A0

MAX = .369

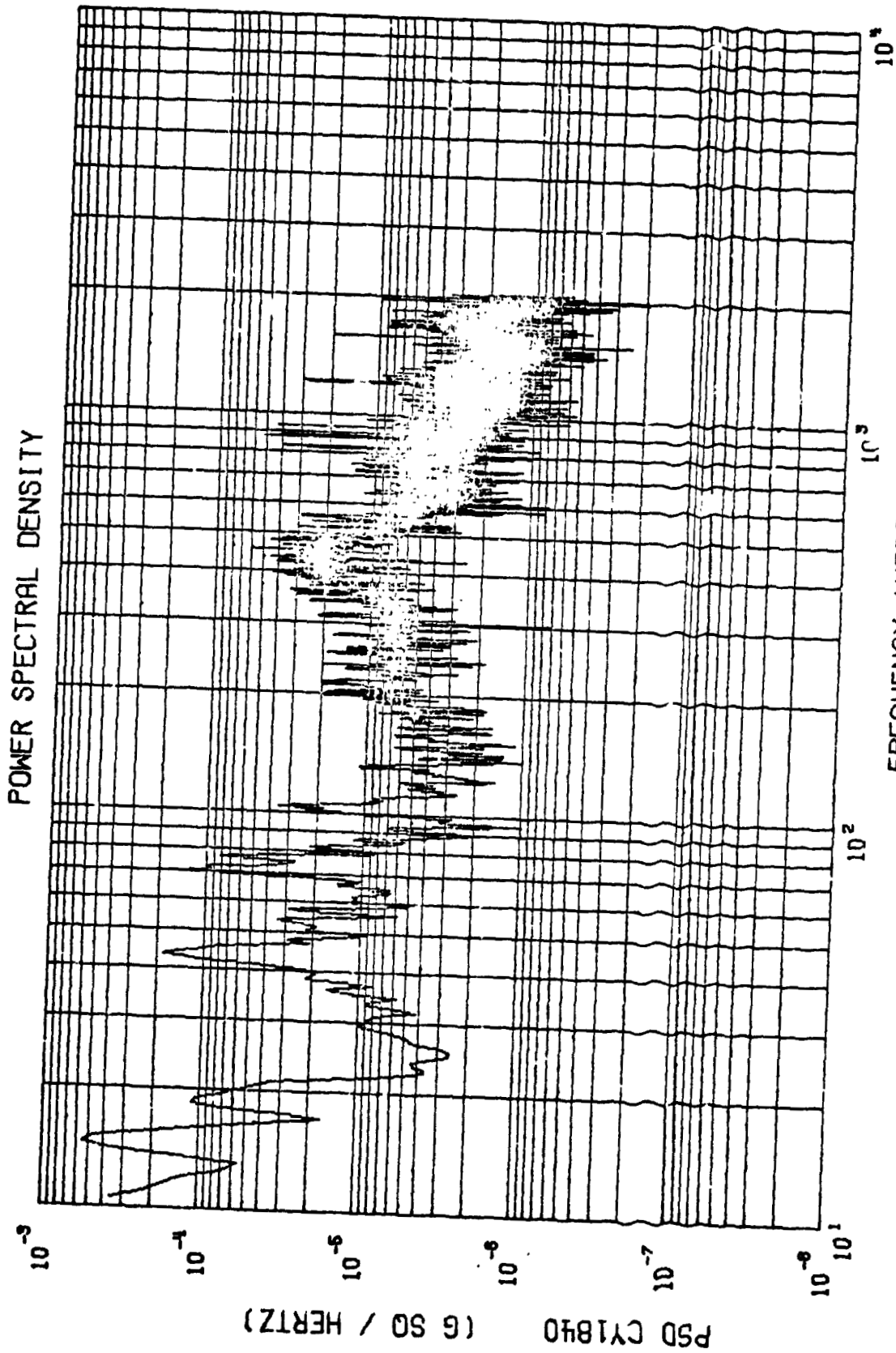
MIN = - .111

VIKING R FLT (CIF)

MAX Q - 2.5

4000 SPS

CY1840



$\Delta F = .499$   
 $MEAN = -84746 \times 10^{-4}$   
 $START = 67181.000 \text{ SEC}$   
 $STOP = 67182.999 \text{ SEC}$   
 $\sigma = 13987 \times 10^{-5}$   
 $3\sigma = 41961 \times 10^{-5}$

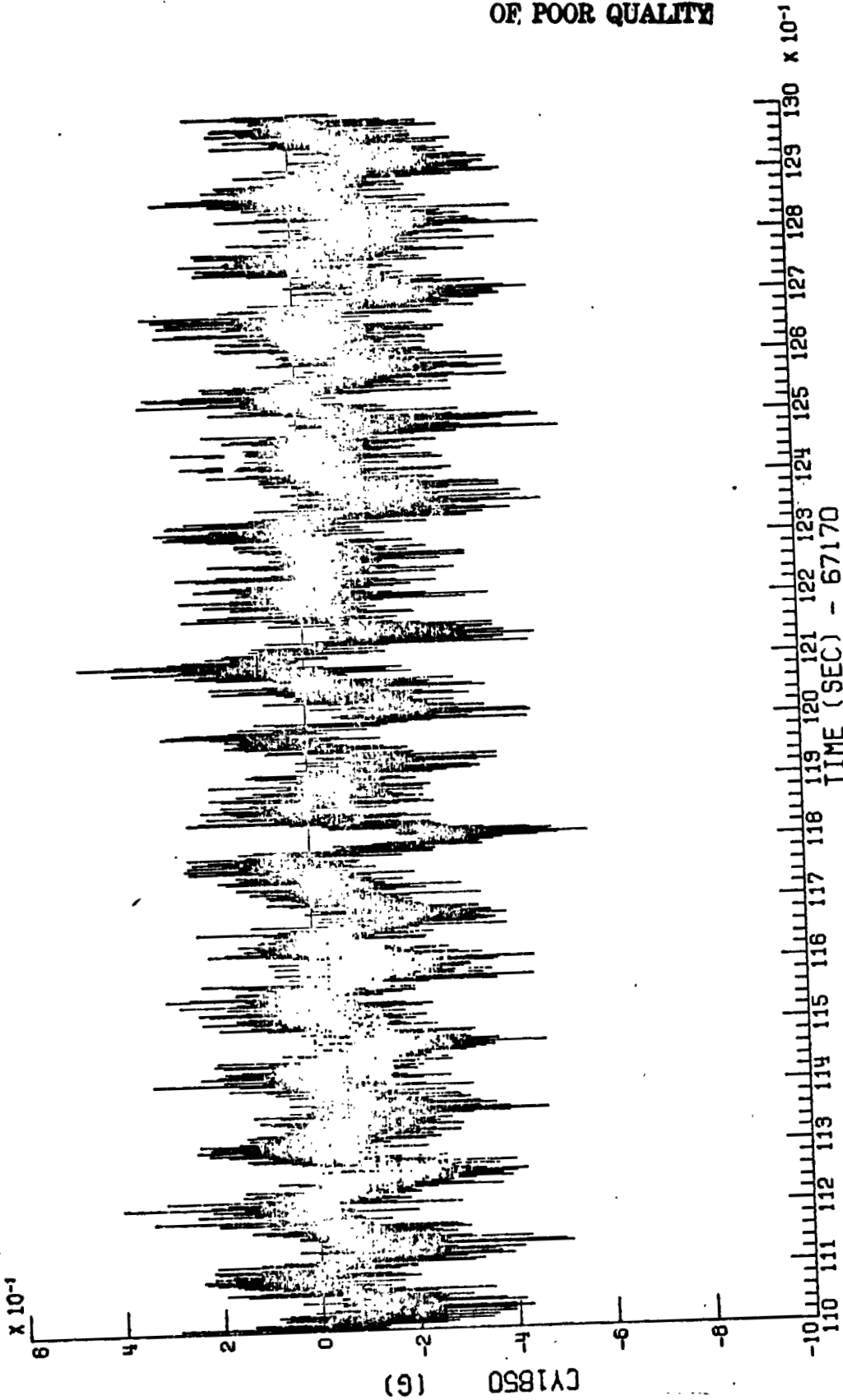
VIKING B FLT (CIF)  
 MAX 0 - 2.5  
 4096 SPS  
 CY1840

Figure 4.60b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

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OF POOR QUALITY

TIME HISTORY



MIN = -.561

MAX = .461

CY1850

MAX 0 - 2.5

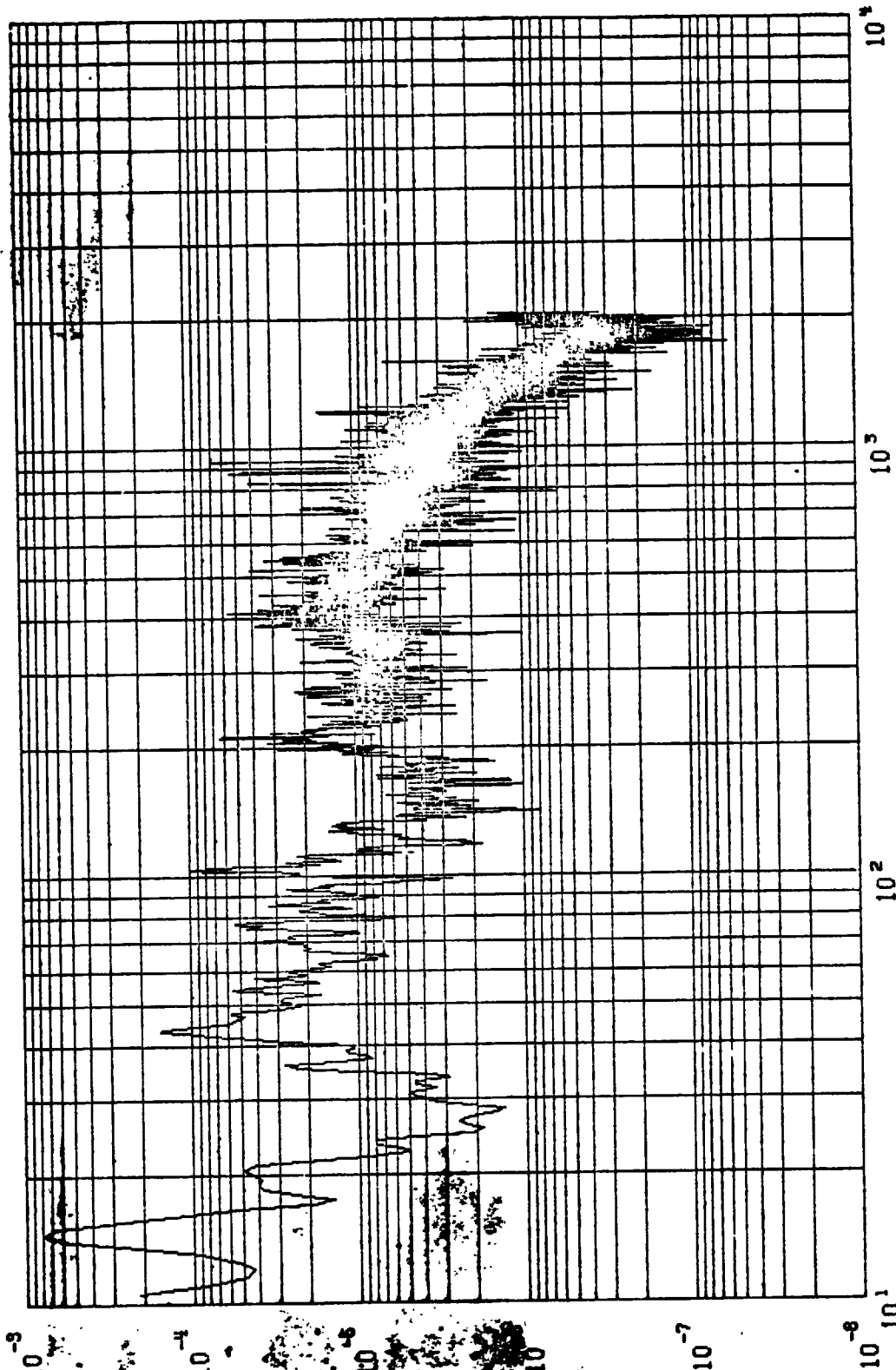
4096 SPS

Figure 4.61a

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$  START = 67181.000 SEC STOP = 67182.999 SEC  
 MEAN =  $-77164 \times 10^{-6}$   $\sigma^2 = 18956 \times 10^{-6}$   $\sigma = 13768 \times 10^{-5}$   $3\sigma = 41306 \times 10^{-5}$

CY1850

MAX Q - 2.5

4096 SPS

Figure 4.61b

VIKING B FLT (CIF)

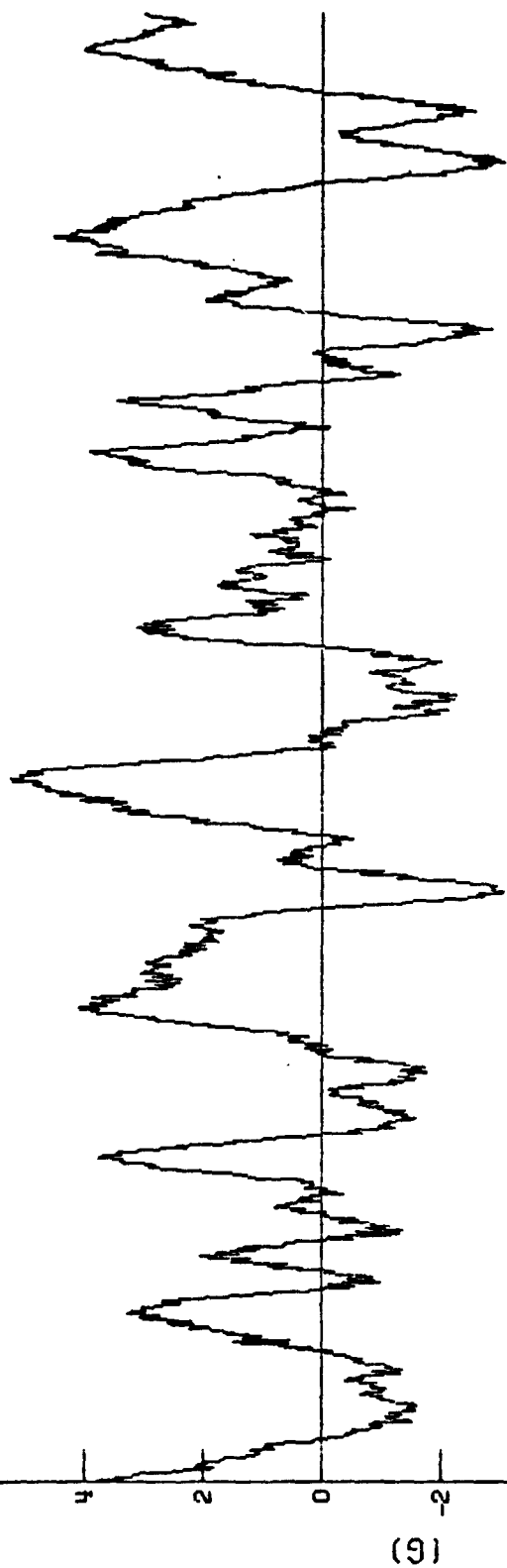
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

ORIGINAL PAGE IS  
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# TIME HISTORY

$\times 10^{-1}$

126



(9)

700X

110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130  $\times 10^{-1}$   
TIME (SEC) - 67.70

MAX = .523

MIN = -.304

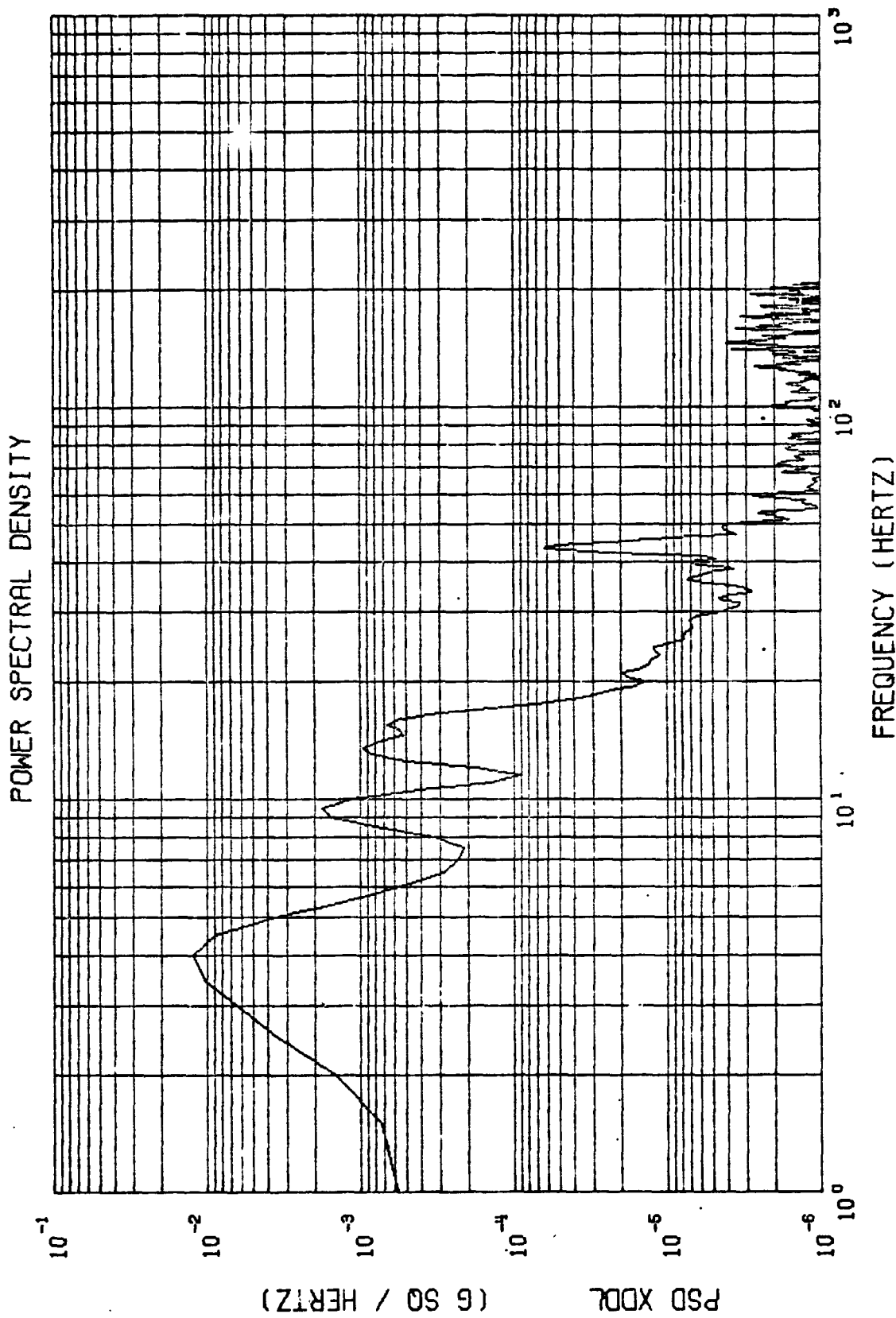
VIKING B FLT (CIF)

MAX Q - 2.5

XDDL

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.62a



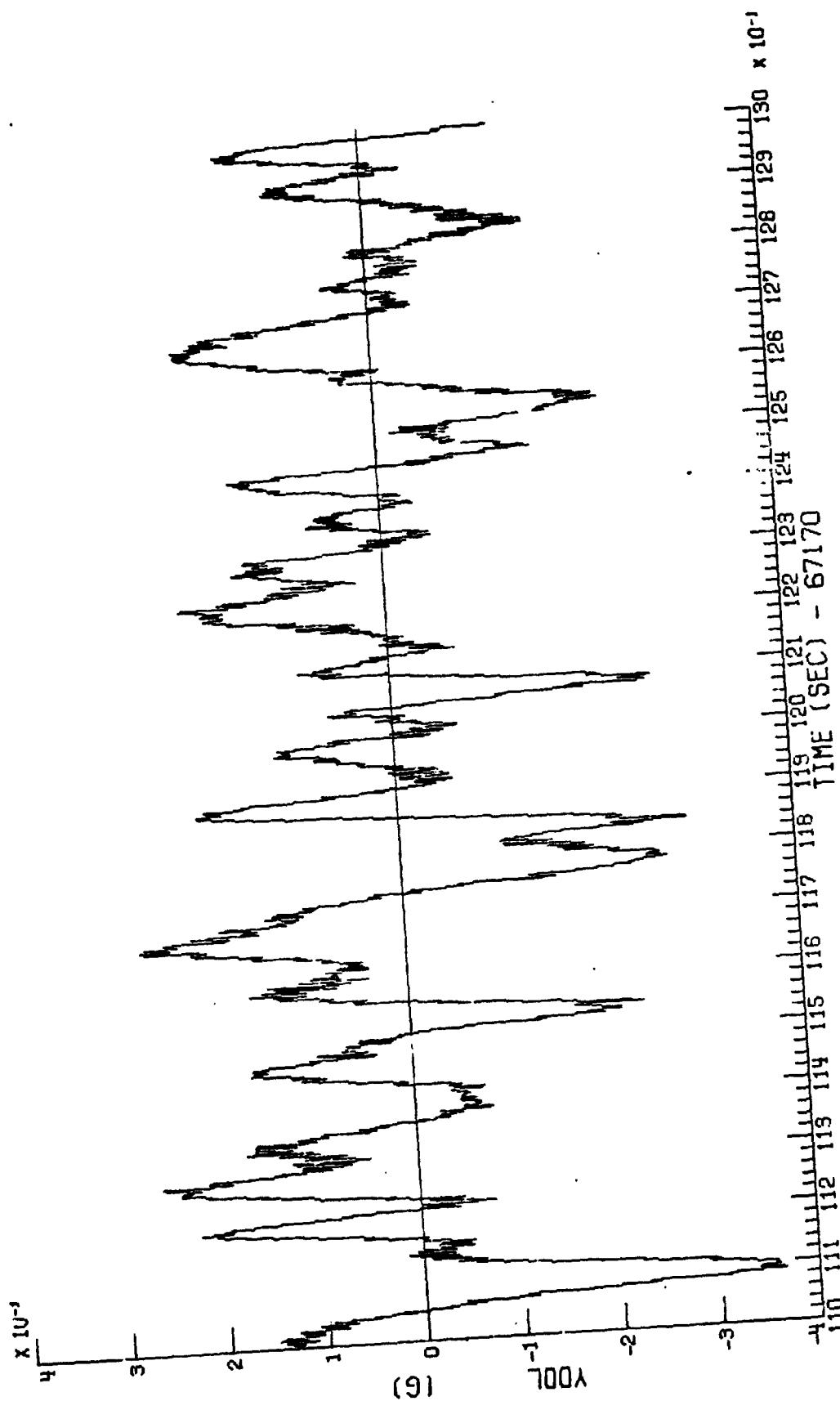
$\Delta F = .500$   
 $MEAN = 78408 \times 10^{-5}$   
 $\sigma^2 = 32396 \times 10^{-5}$   
 $\sigma = 17998 \times 10^{-5}$   
 $3\sigma = 53996 \times 10^{-5}$

VIKING B FLT (CIF)      MAX Q - 2.5      XDDL

Figure 4.62b



# TIME HISTORY



MIN = -.365

MAX = .270

YDDL  
Figure 4.63a

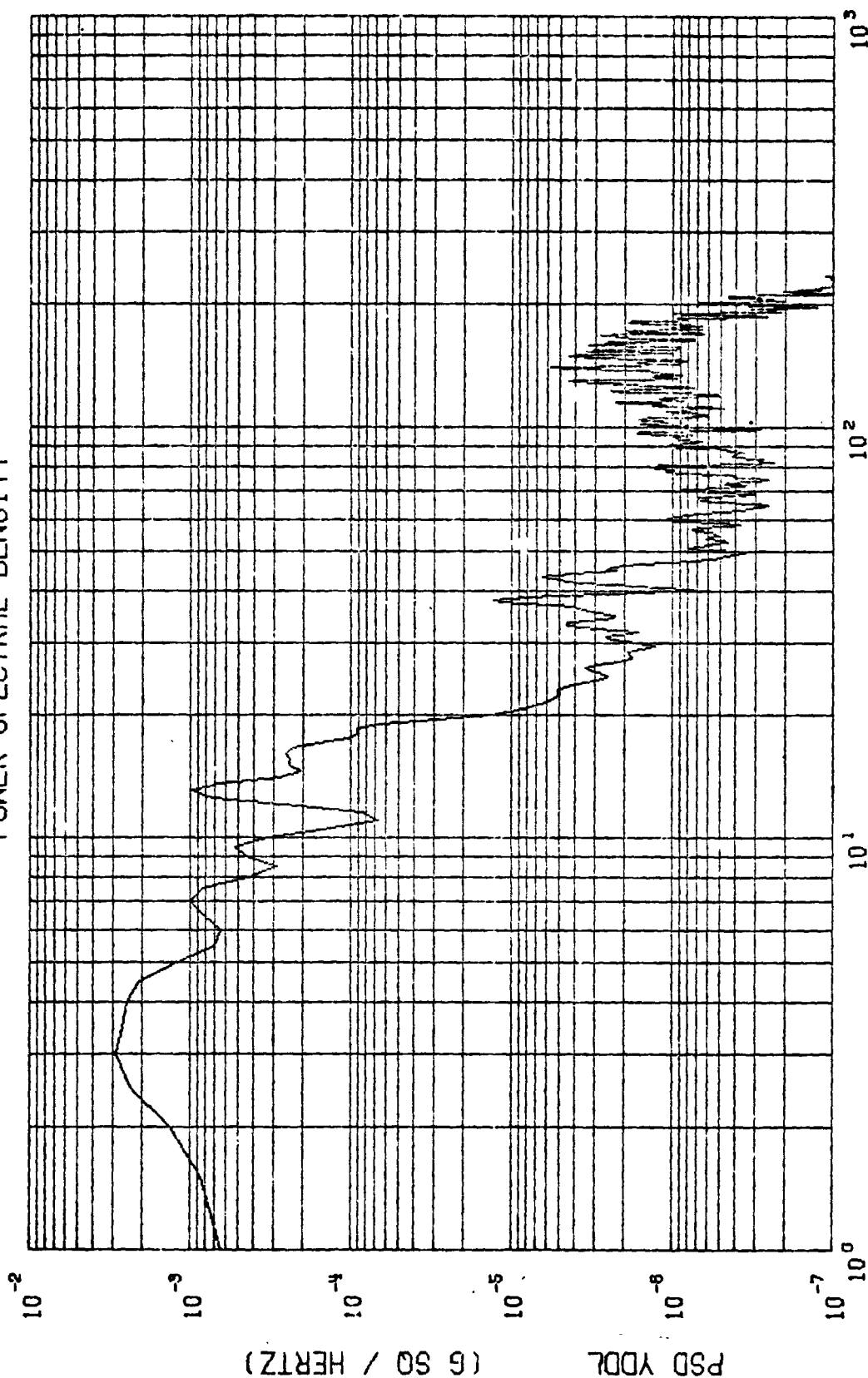
MAX Q - 2.5

VIKING B FLT (CIF)

09/23/75

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$       START = 67181.000 SEC      STOP = 67182.999 SEC  
 MEAN =  $12139 \times 10^{-6}$        $\sigma^2 = 14234 \times 10^{-6}$        $\sigma = 11931 \times 10^{-6}$        $3\sigma = 35793 \times 10^{-6}$

YDDL

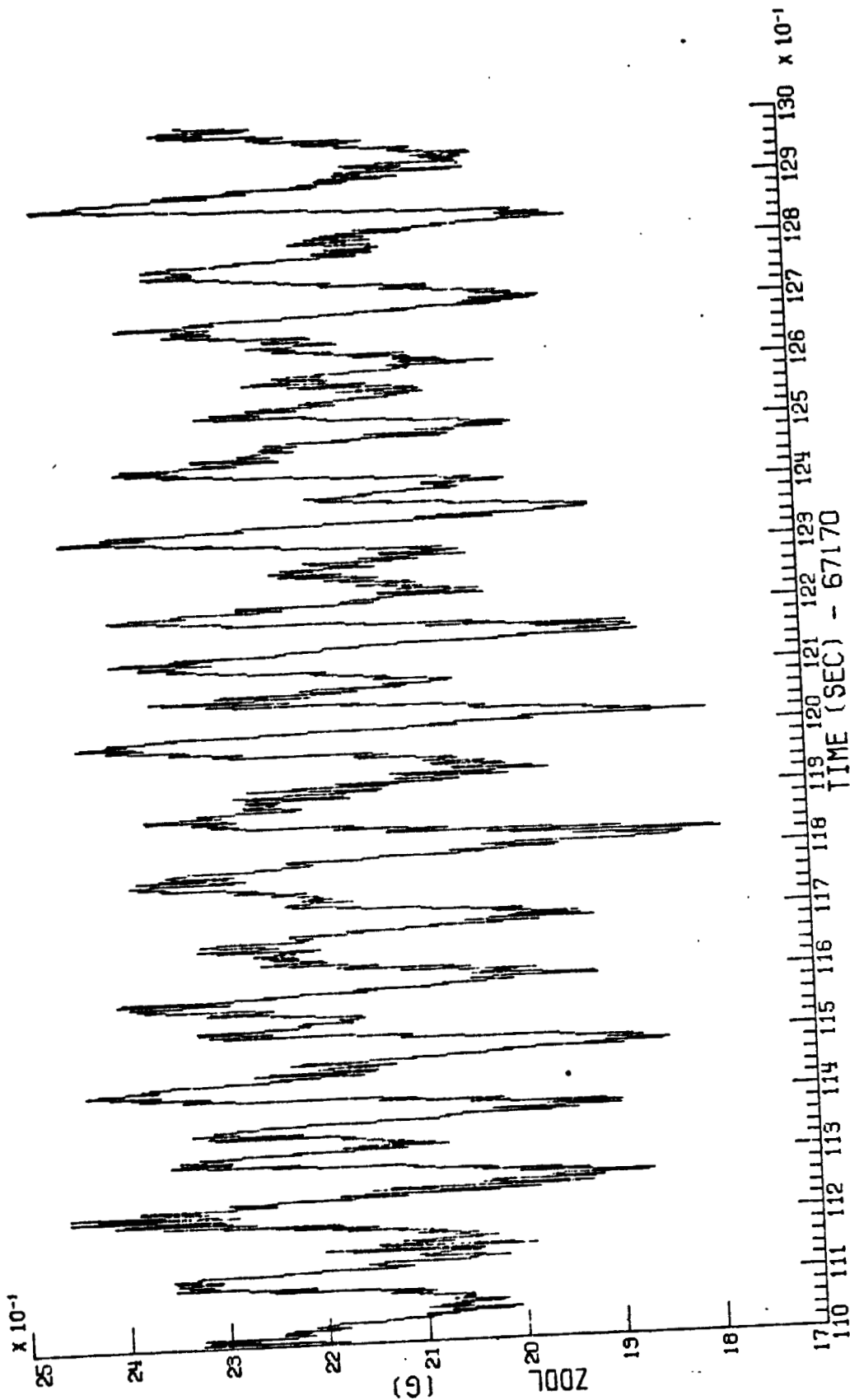
MAX Q - 2.5

VIKING B FLT (CIF)

Figure 4.63b

NASA-LANGLEY STUDENT ANALYSIS PROGRAM 09/03/75

# TIME HISTORY



MIN = 1.787

MAX = 2.457

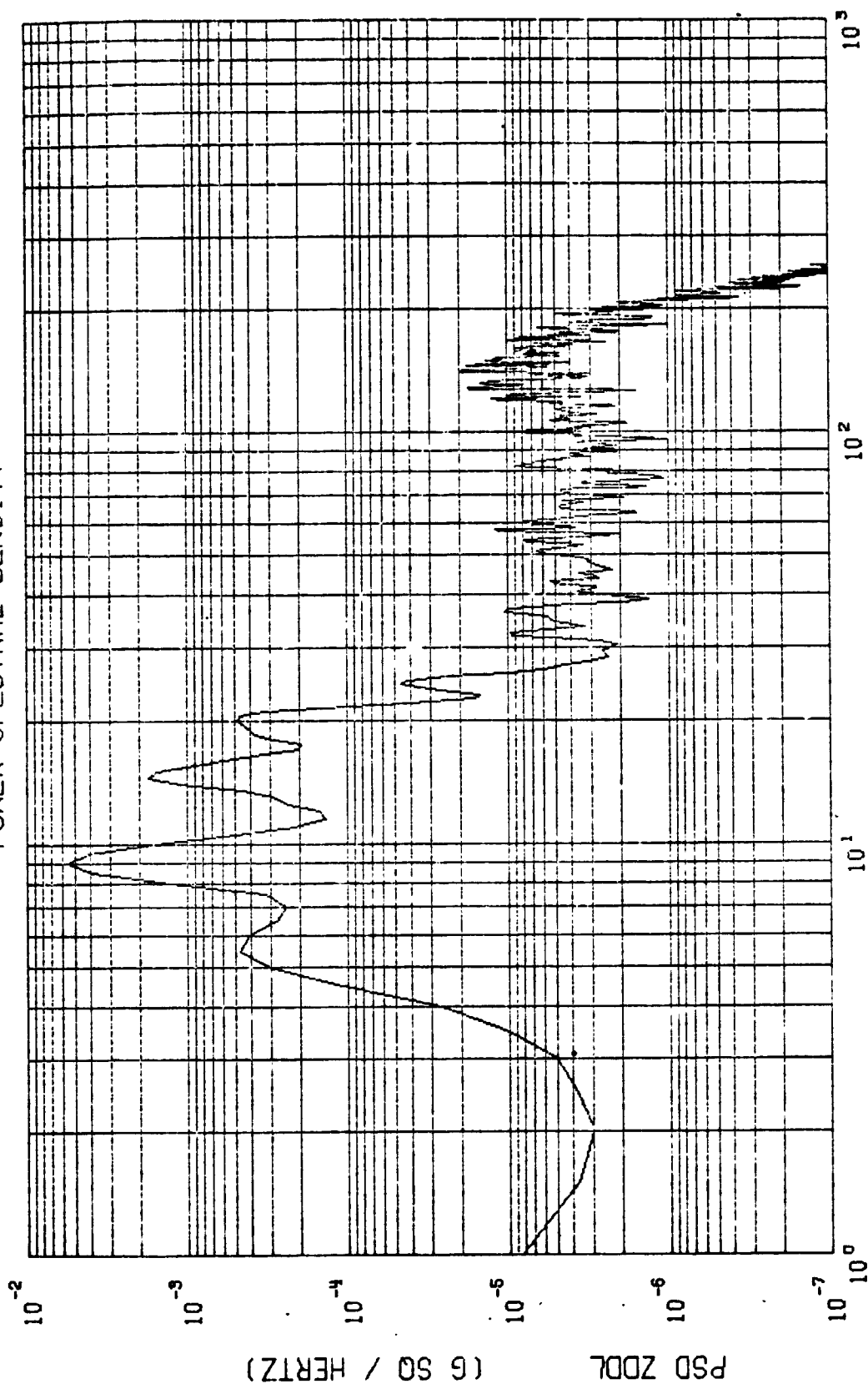
Z00L  
Figure 4.64a

MAX 0 - 2.5

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$       START = 67181.000 SEC      STOP = 67182.999 SEC  
 MEAN =  $21611 \times 10^{-4}$        $\sigma^2 = 16228 \times 10^{-6}$        $\sigma = 12739 \times 10^{-5}$        $3\sigma = 38217 \times 10^{-5}$

VIKING B FLT (CIF)

MAX U - 2.5

ZDDL

Figure 4.64b

# TIME HISTORY

$\times 10^{-1}$

3

2

1

0

(g)

Z00B

-1

-2

-3

-4

-5

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

TIME (SEC) - 67170

$\times 10^{-1}$

MAX = .087

MIN = -.446

VIKING B FLT (CIF)

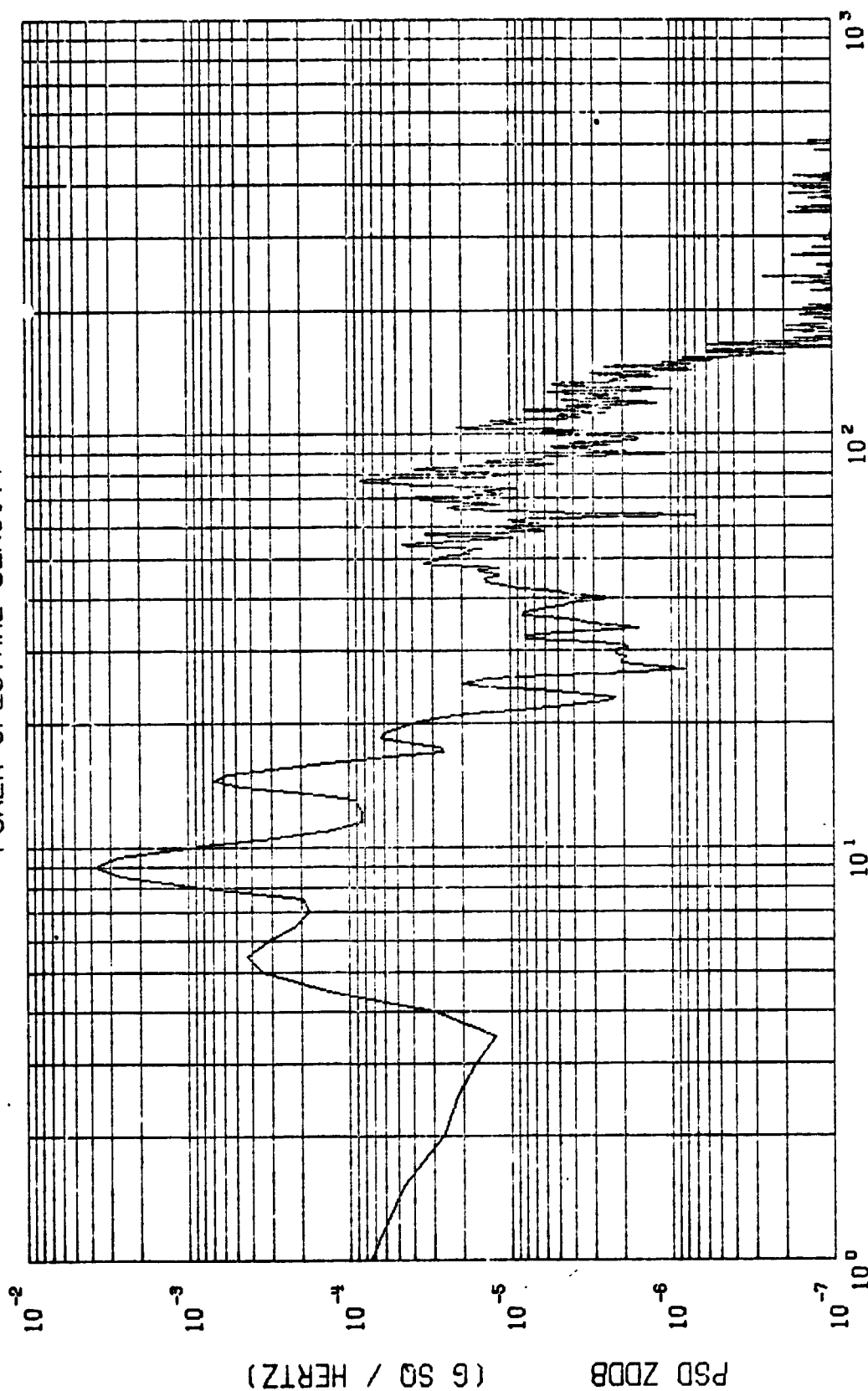
MAX Q - 2.5

Z00B

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.65a

# POWER SPECTRAL DENSITY



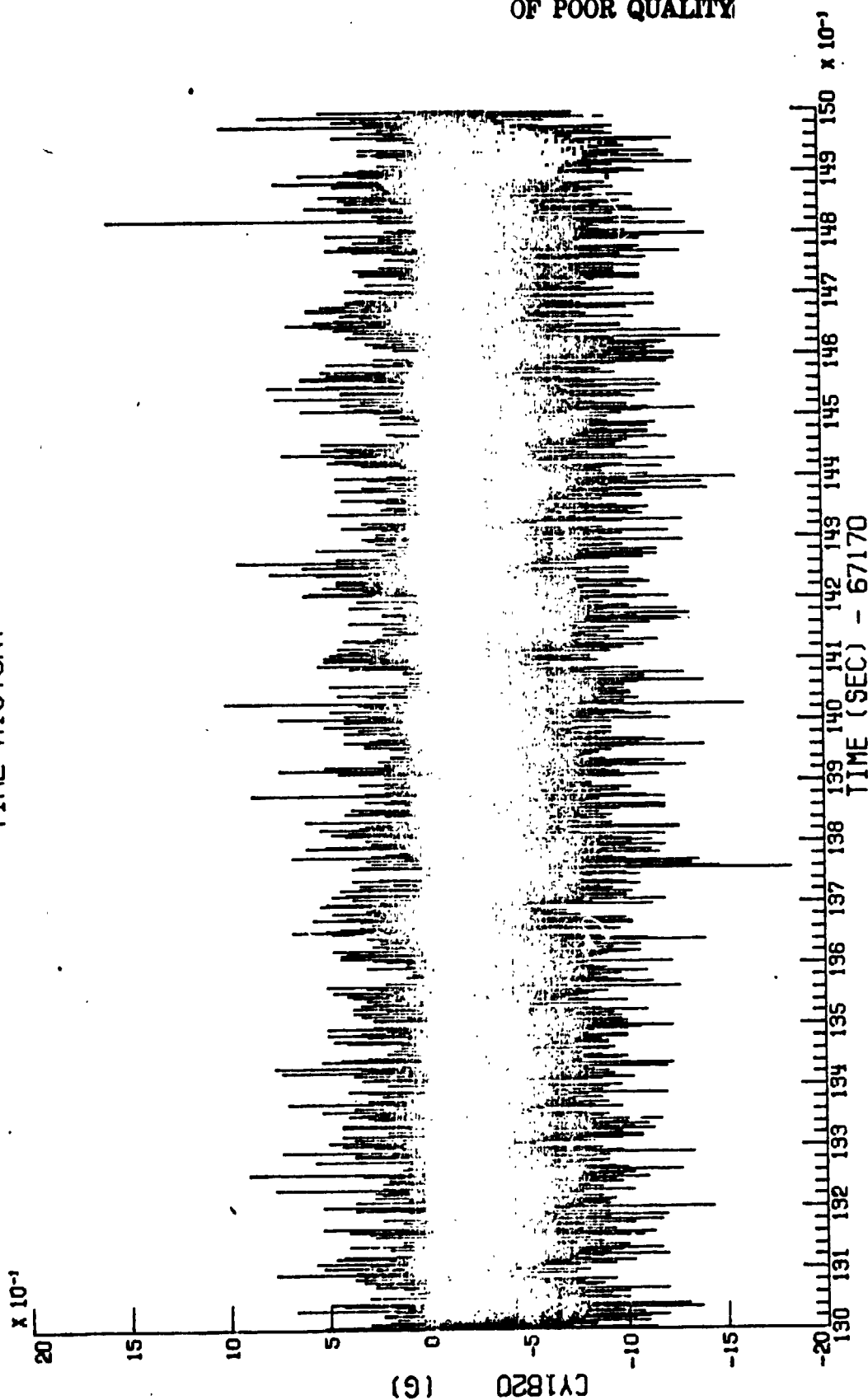
$\Delta F = .500$       START = 67181.000 SEC      STOP = 67182.999 SEC  
 MEAN =  $-17774 \times 10^{-5}$        $\sigma^2 = 9553 \times 10^{-5}$        $\sigma = 97739 \times 10^{-5}$        $3\sigma = 29321 \times 10^{-5}$

VIKING B FLT (CIF)      MAX Q - 2.5      ZDOB

Figure 4.65b

ORIGINAL PAGE IS  
OF POOR QUALITY

TIME HISTORY



MIN = -1.834

MAX = 1.567

CY1820

MAX Q - 3

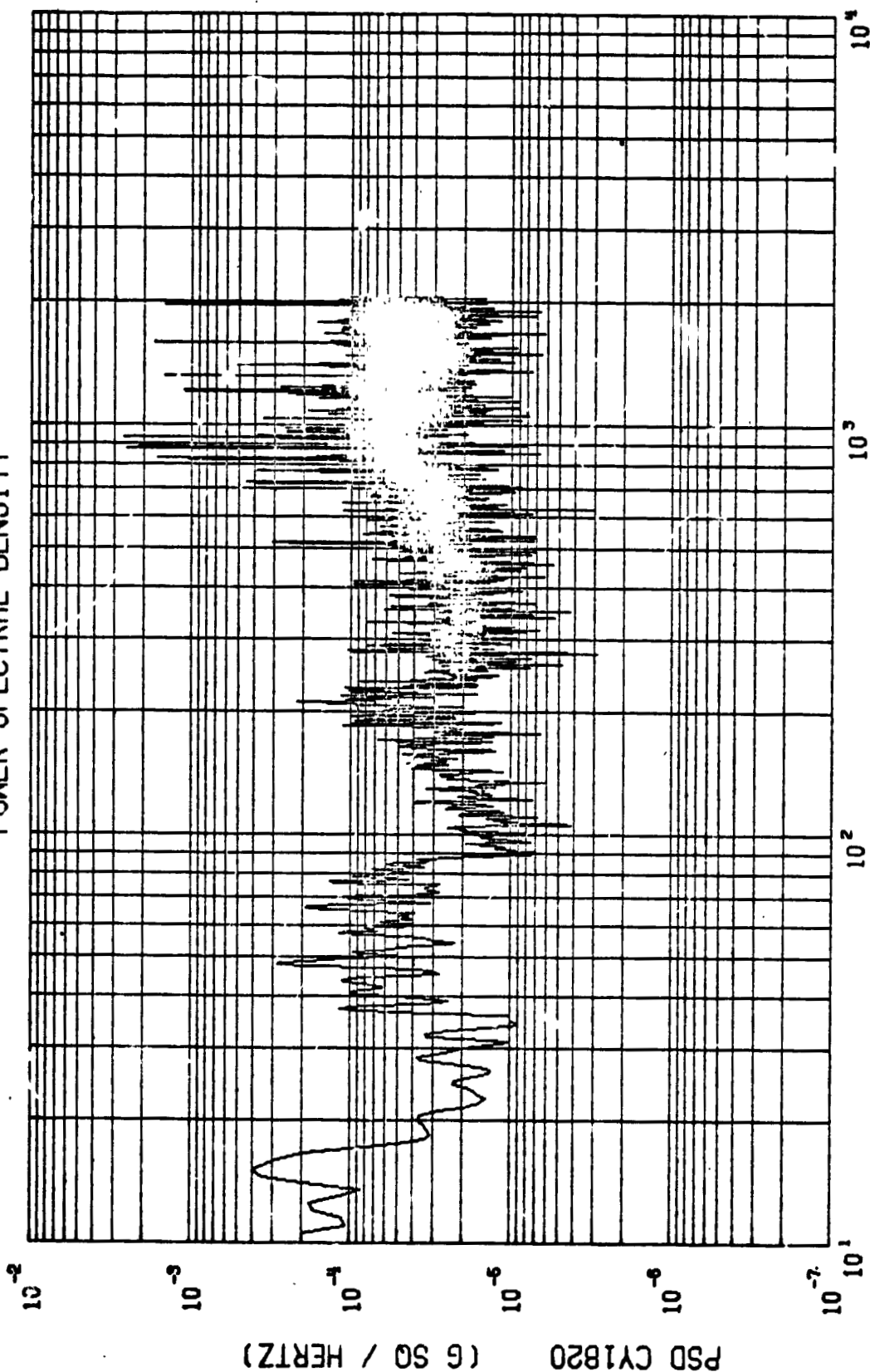
4096 SPS

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM ' 09/22/75

Figure 4.66a

# POWER SPECTRAL DENSITY



$\Delta F = .499$   
 $\text{MEAN} = -30529 \times 10^{-6}$   
 $\sigma^2 = 12191 \times 10^{-6}$   
 $\sigma = 34916 \times 10^{-3}$   
 $3\sigma = 10475 \times 10^{-3}$

VIKING B FLT (CIF)      MAX Q - 3      CY1820

4096 SPS

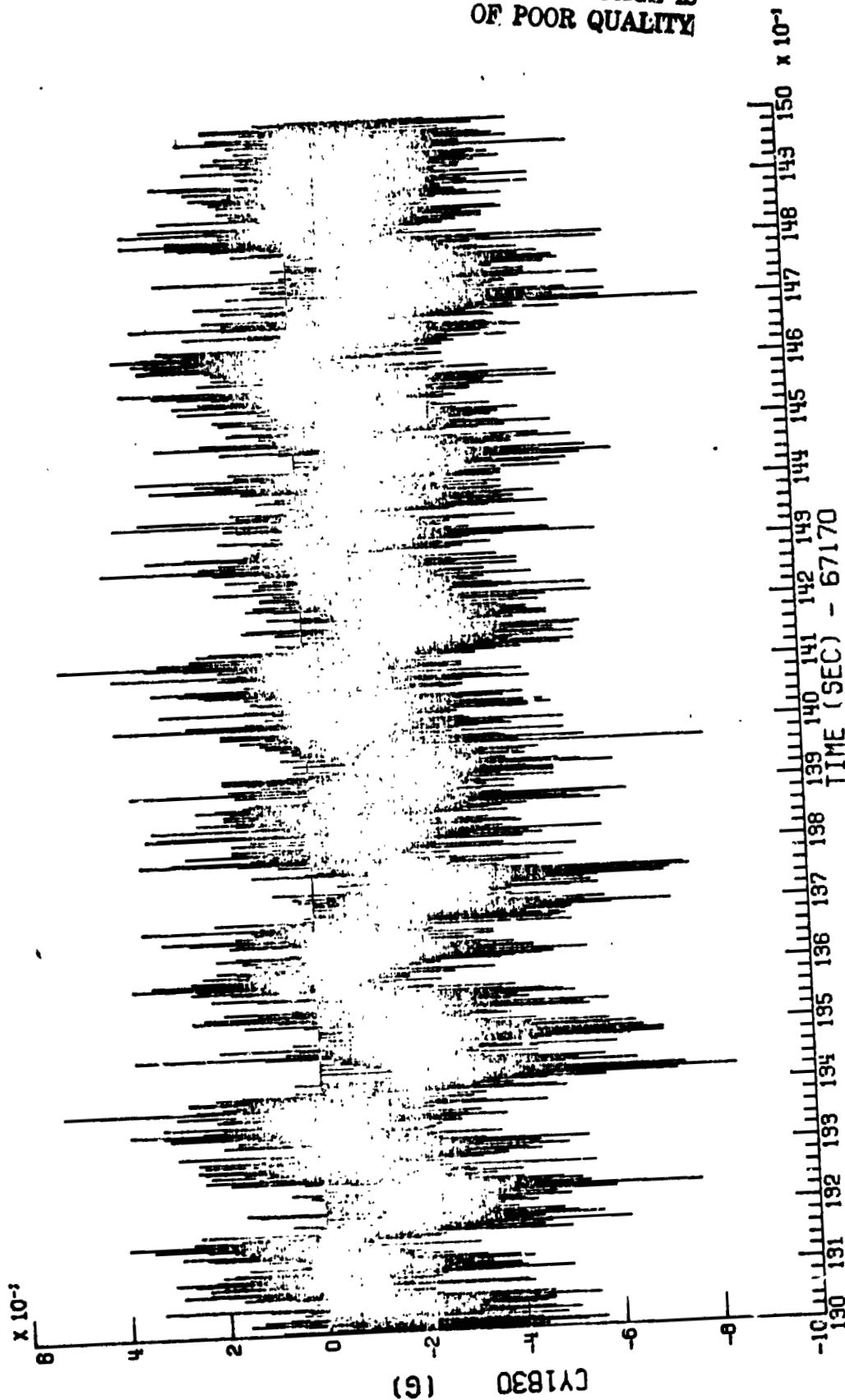
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09, /75

Figure 4. 66b



ORIGINAL PAGE IS  
OF POOR QUALITY

TIME HISTORY



MIN = -.841

MAX = .520

CY1830

MAX 0 - 3

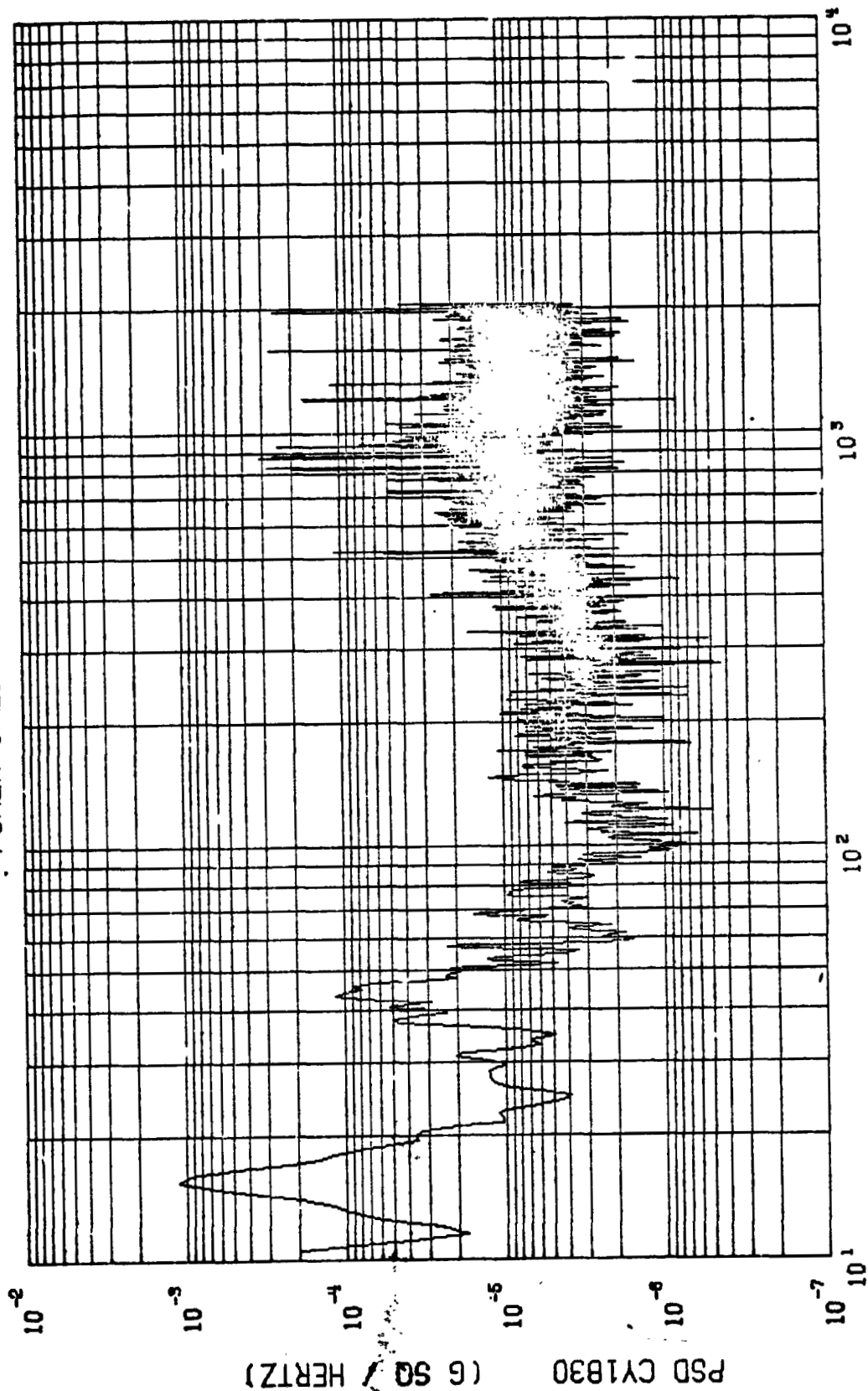
4096 SPS

Figure 4.67a

VIKING B FLT (CIF)

WASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -13322 \times 10^{-5}$   
 $\sigma^2 = 2803 \times 10^{-5}$   
 $\sigma = 16742 \times 10^{-3}$   
 $3\sigma = 50226 \times 10^{-5}$

$START = 67183.000 \text{ SEC}$   
 $STOP = 67184.999 \text{ SEC}$

VIKING B FLT (CIF)

MAX Q - 3

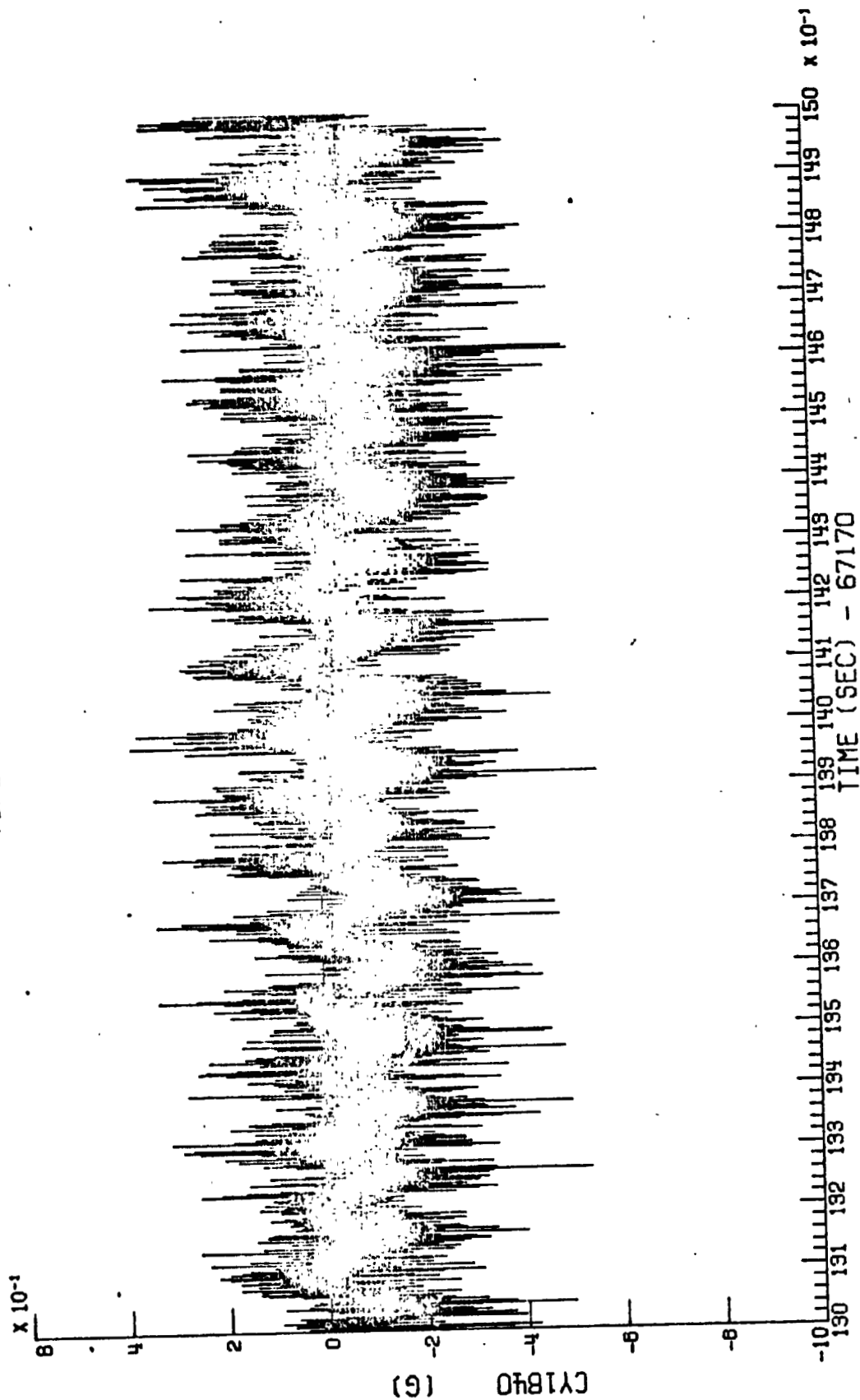
CY1830

4096 SPS

Figure 4.67b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY



MIN = -.556

MAX = .378

CY1840

MAX Q - 3

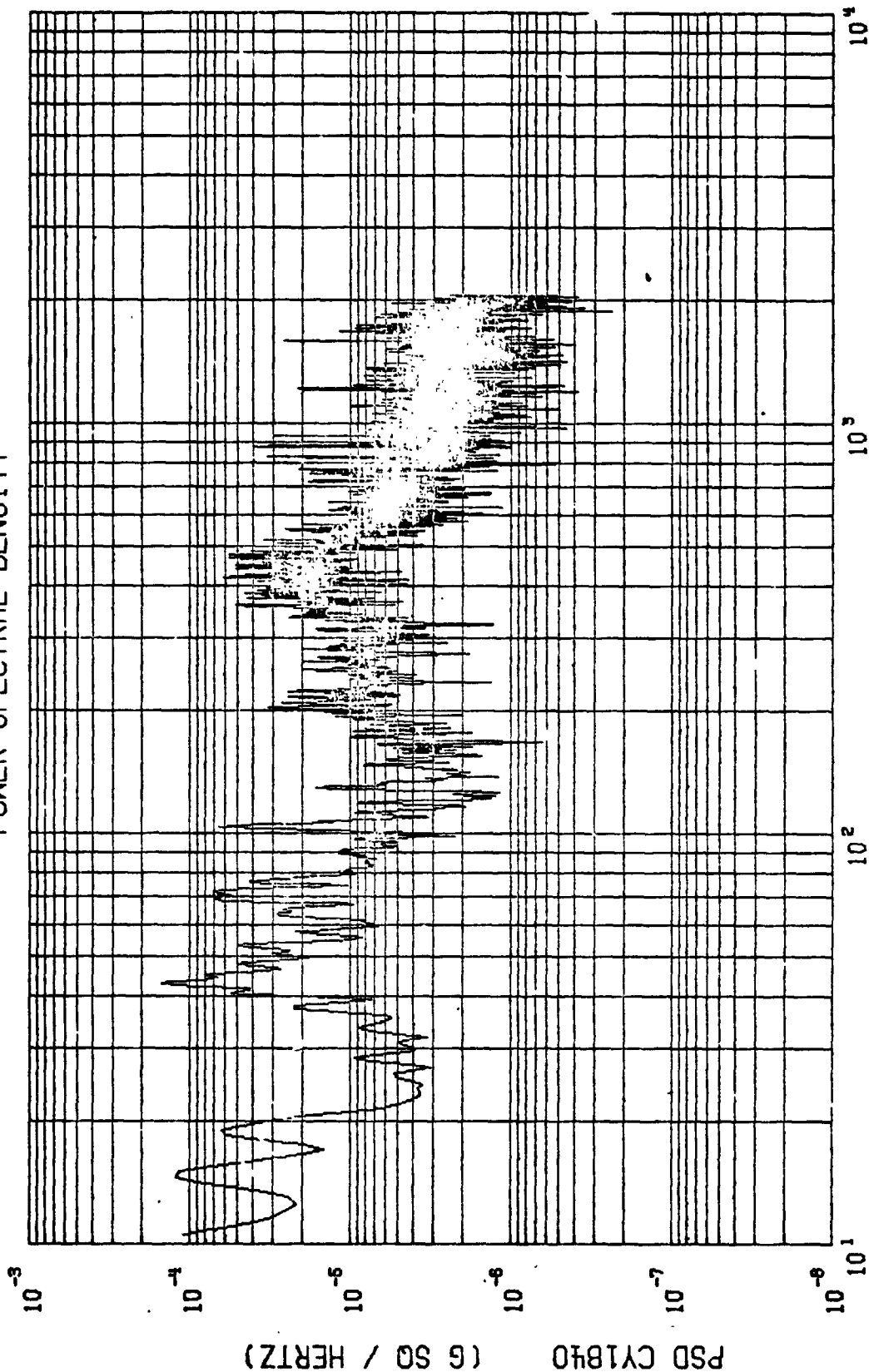
4096 SPS

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.68a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -67874 \times 10^{-3}$   
 $\sigma^2 = 16419 \times 10^{-6}$   
 $\sigma = 12814 \times 10^{-3}$   
 $3\sigma = 38442 \times 10^{-3}$

VIKING B FLT (CIF)

MAX Q - 3

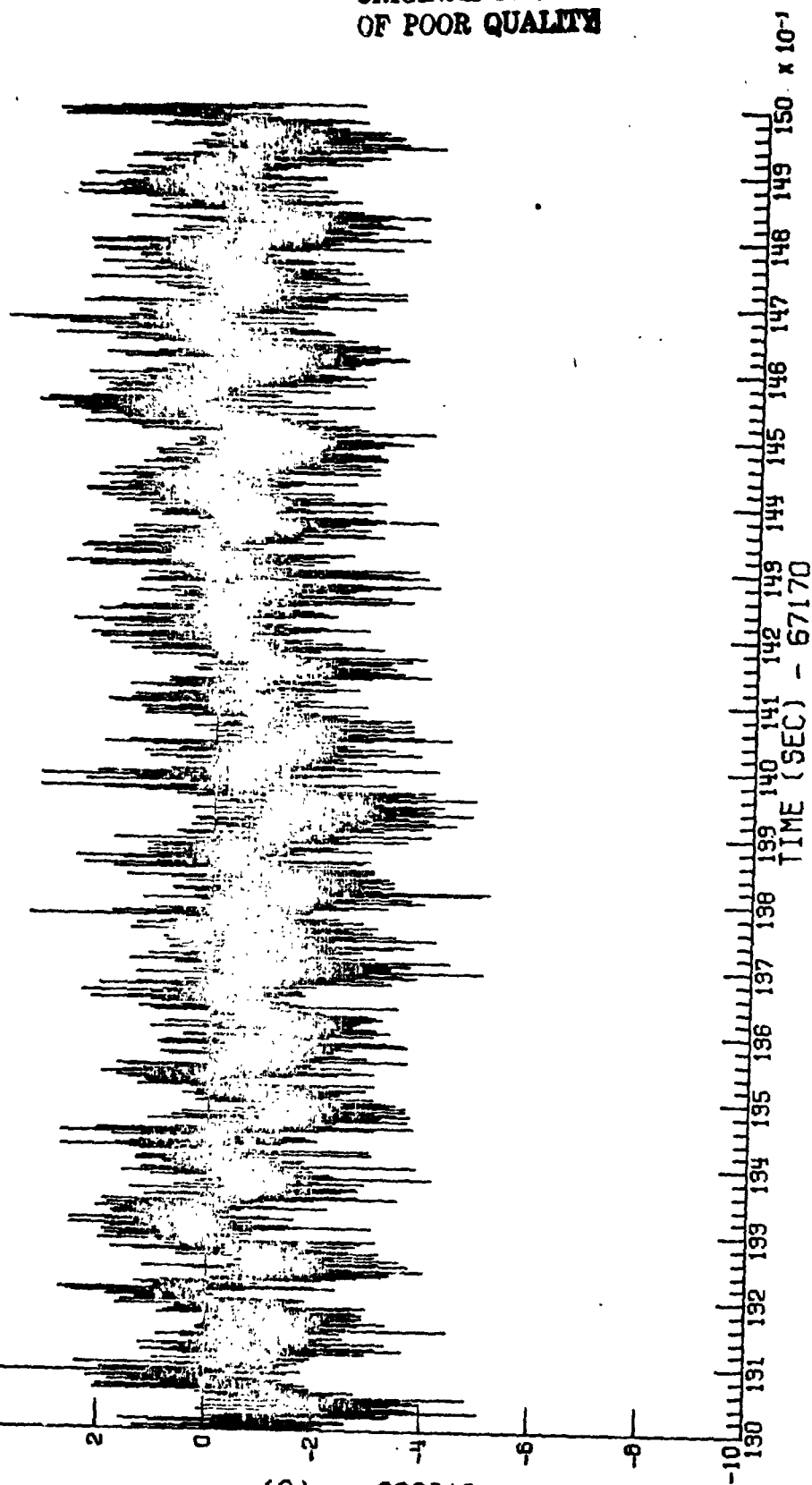
CY1840

TIME HISTORY

$\times 10^{-7}$

140

(6) CY1850



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OF POOR QUALITY

MAX = .467

MIN = -.511

VIKING B FLT (CIF)

MAX Q - 3

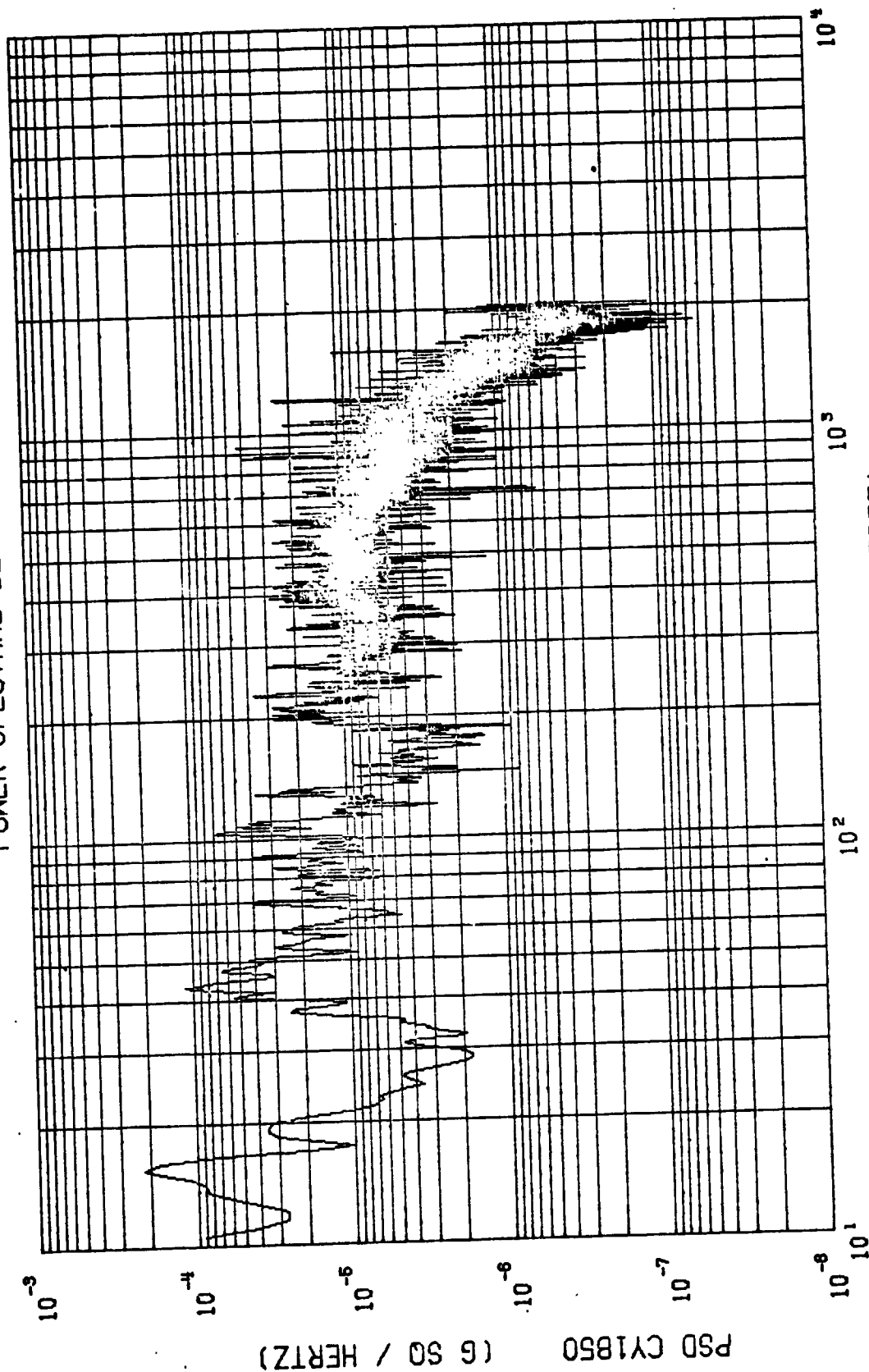
NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

1096 SP 5

CY1850

Figure 4.69a

# POWER SPECTRAL DENSITY



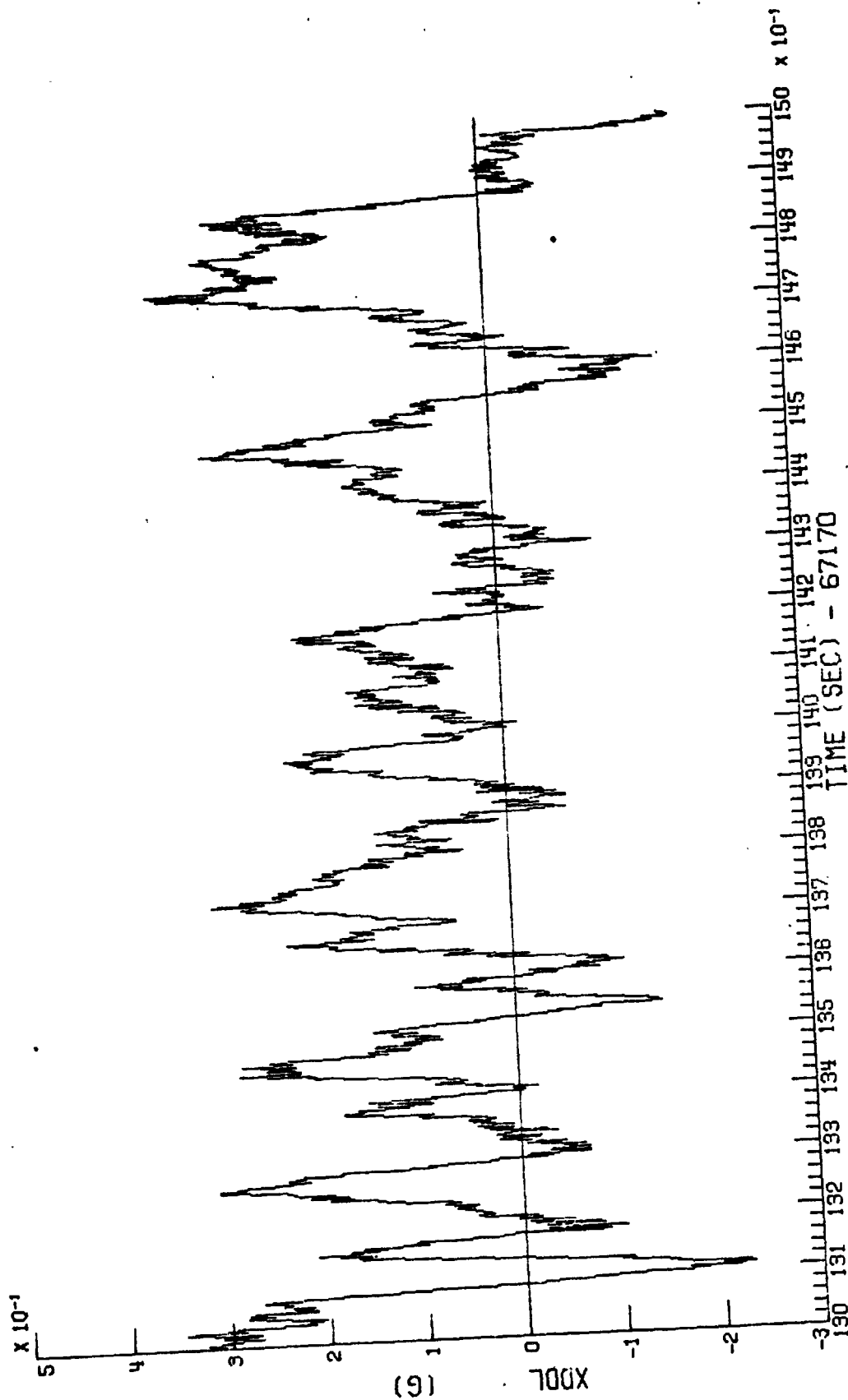
FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -61629 \times 10^{-5}$   
 $\sigma^2 = 1598 \times 10^{-5}$   
 $\sigma = 12641 \times 10^{-5}$   
 $3\sigma = 37923 \times 10^{-5}$   
 $START = 67183.000 \text{ SEC}$   
 $STOP = 67184.999 \text{ SEC}$   
 $MAX \ 0 - 3$   
 $CY1850$

VIKING B FLT (CIF)

Figure 4.69b

# TIME HISTORY



MIN = -.230

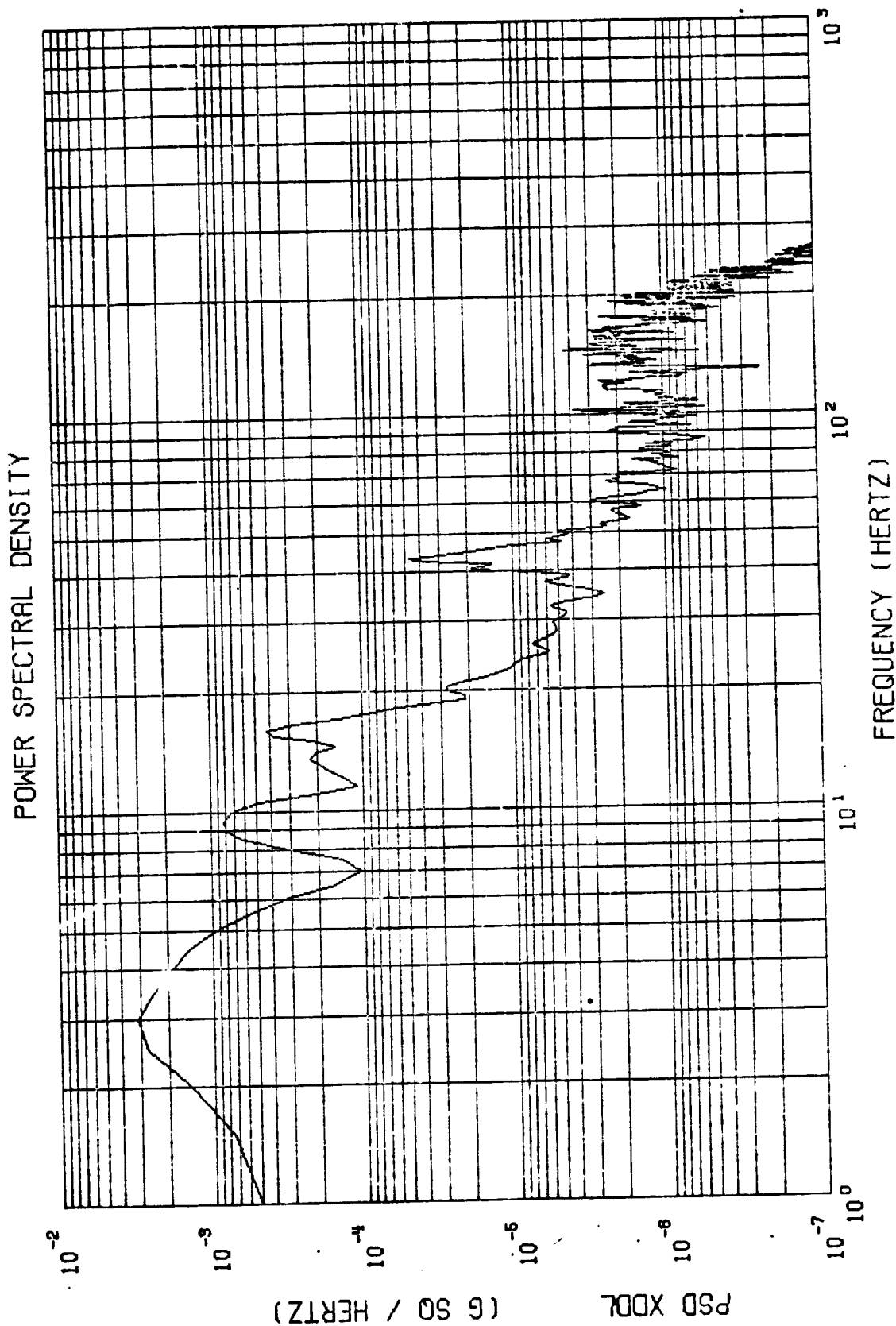
MAX = .345

XDDL

MAX Q - 3

VIKING B FLT (CIF)

Figure 4.70a



$\Delta F = .500$   
 $\text{START} = 67183.000 \text{ SEC}$   
 $\text{STOP} = 67184.999 \text{ SEC}$   
 $\text{MEAN} = 82454 \times 10^{-6}$   
 $\sigma^2 = 12426 \times 10^{-6}$   
 $\sigma = 11147 \times 10^{-3}$   
 $3\sigma = 33442 \times 10^{-3}$

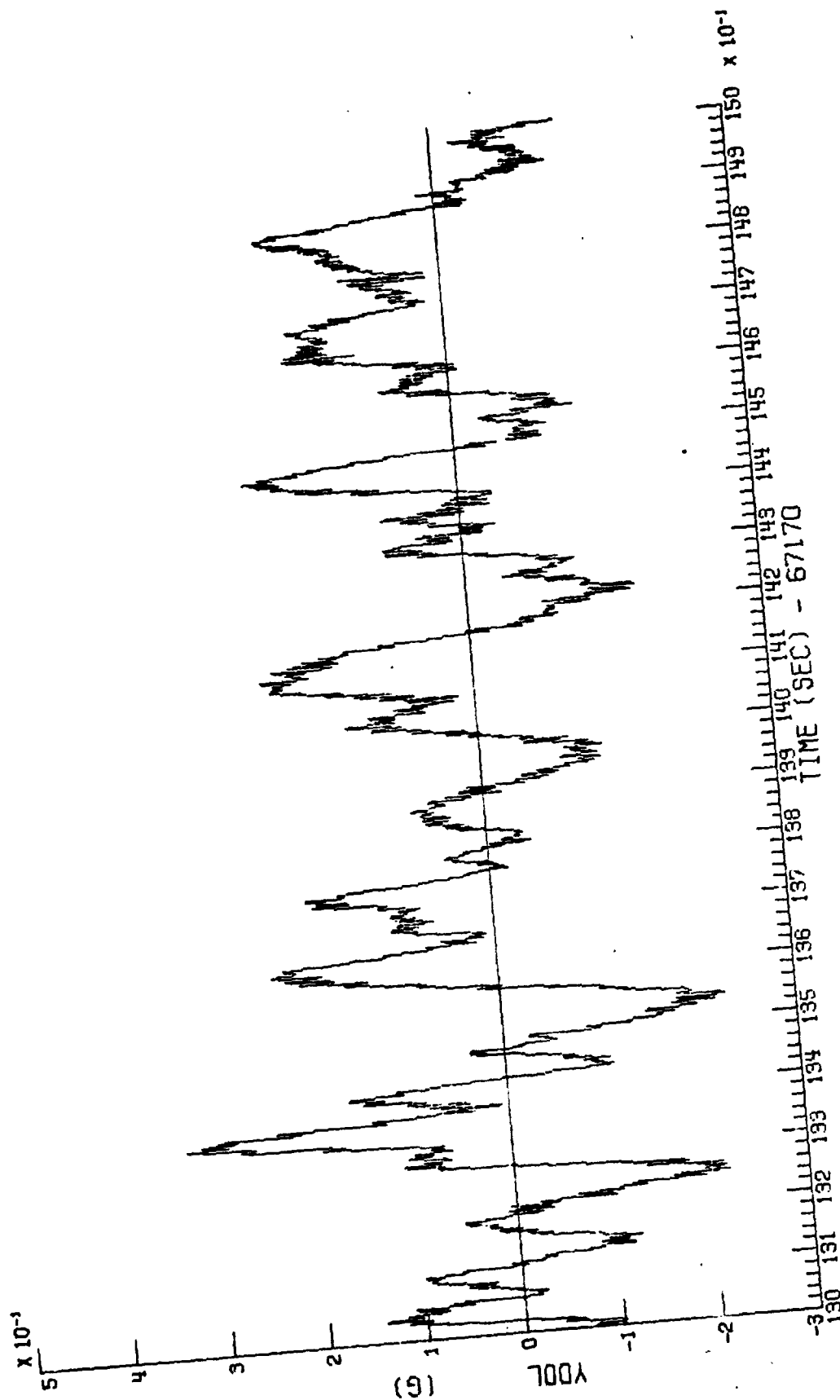
XDDL  
Figure 4.70b

MAX Q - 3

VIKING B FLT (CIF)



# TIME HISTORY



MIN = -.227

MAX = .330

YDD

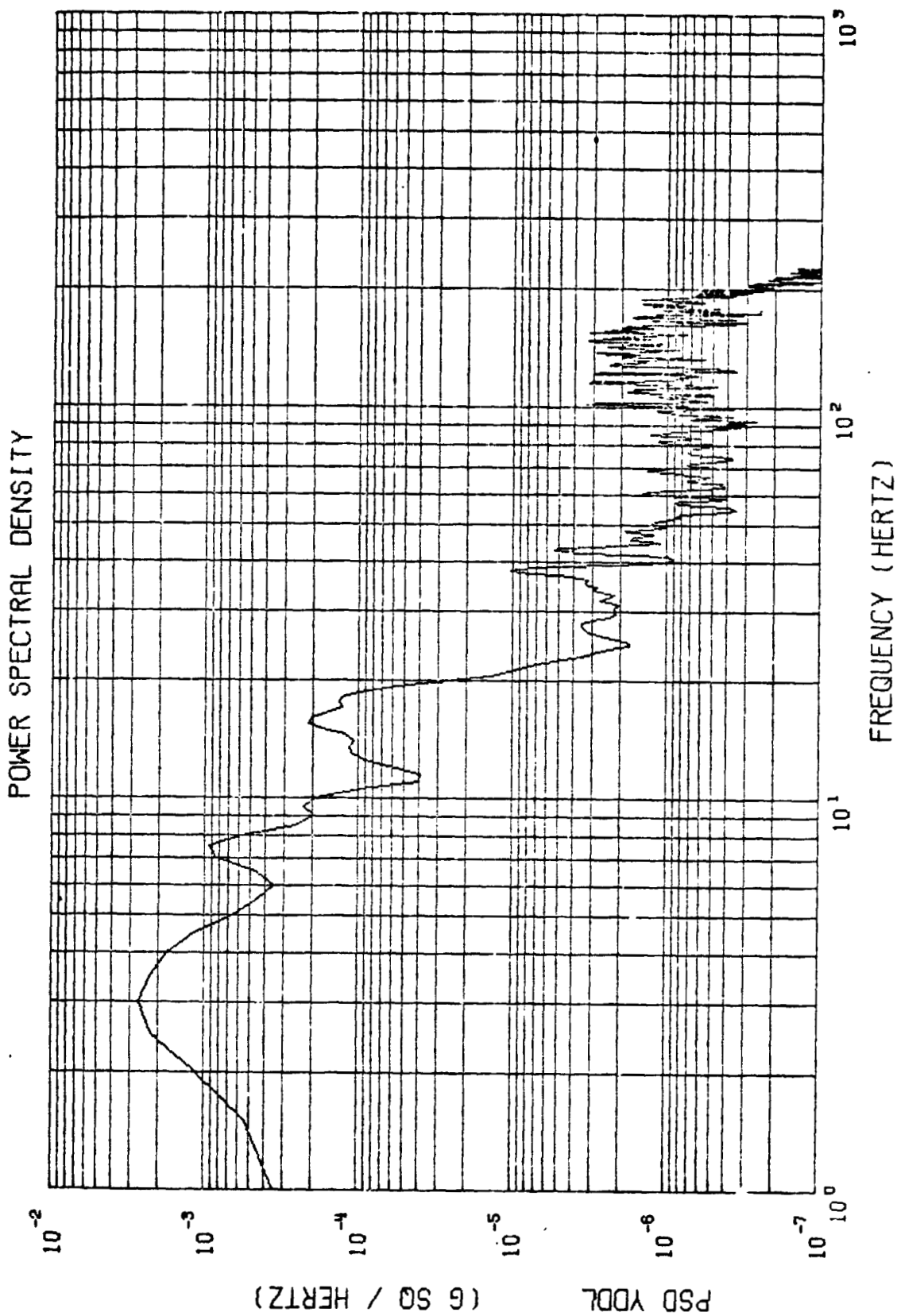
MAX 0 - 3

Figure 4.71a

VIKING B FLT (CIF)

03/23/75

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM

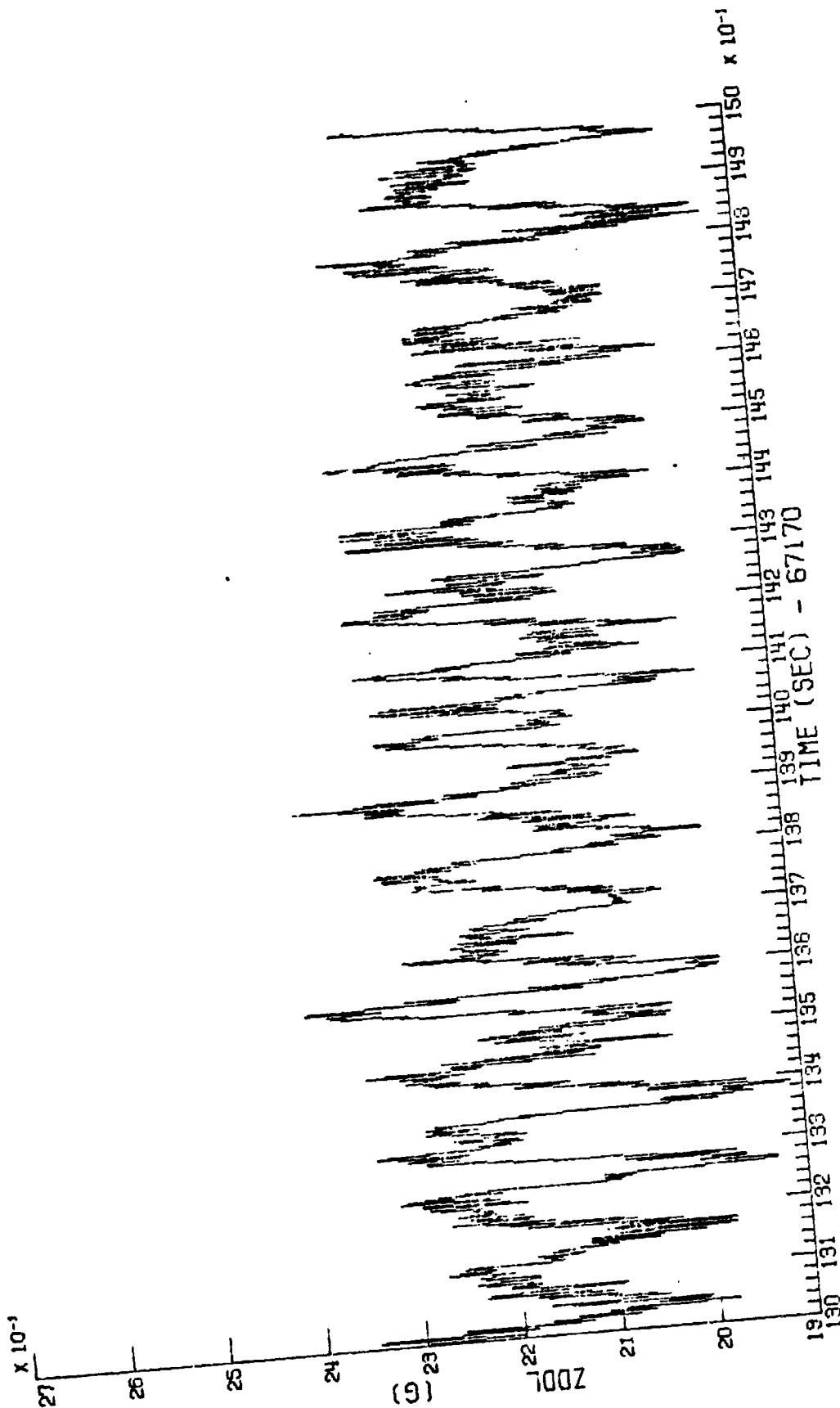


$\Delta F = .500$       START = 67183.000 SEC      STOP = 67184.999 SEC  
 MEAN =  $23107 \times 10^{-6}$        $\sigma^2 = 10111 \times 10^{-6}$        $\sigma = 10055 \times 10^{-3}$        $3\sigma = 30166 \times 10^{-3}$

VIKING 6 FLT (CIF)      MAX 0 - 3      YDDL

Figure 4.71b

# TIME HISTORY



MIN = 1.912

MAX = 2.397

ZDD

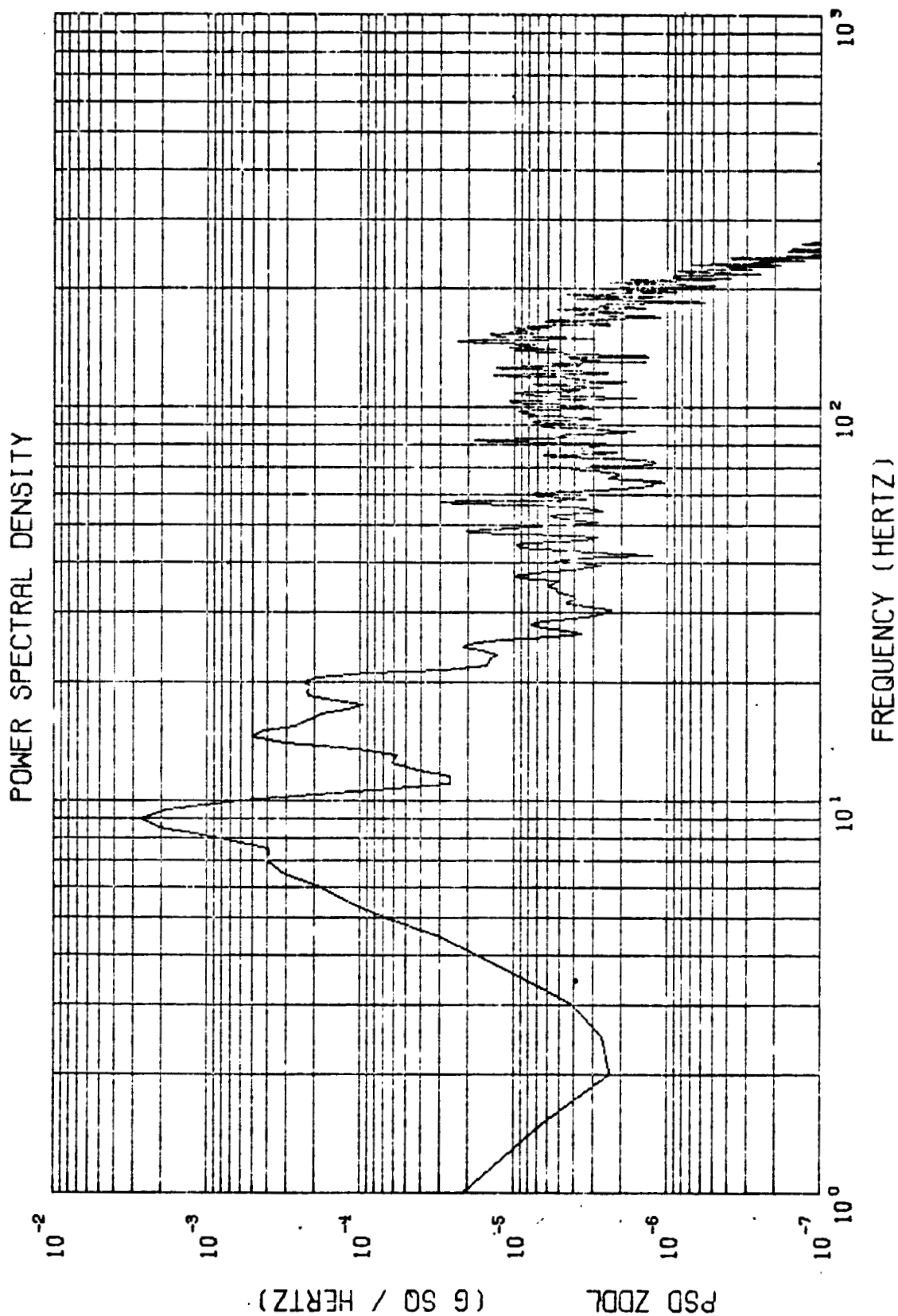
MAX 0 - 3

Figure 4.72a

VIKING B FLT (CIF)

09/23/75

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM



$\Delta F = .500$       START = 67183.000 SEC      STOP = 67184.999 SEC  
 MEAN =  $21541 \times 10^{-4}$        $\sigma^2 = 77263 \times 10^{-7}$        $\sigma = 87899 \times 10^{-6}$        $3\sigma = 26369 \times 10^{-5}$

VIKING B FLT (CIF)      ZODL  
 MAX Q - 3

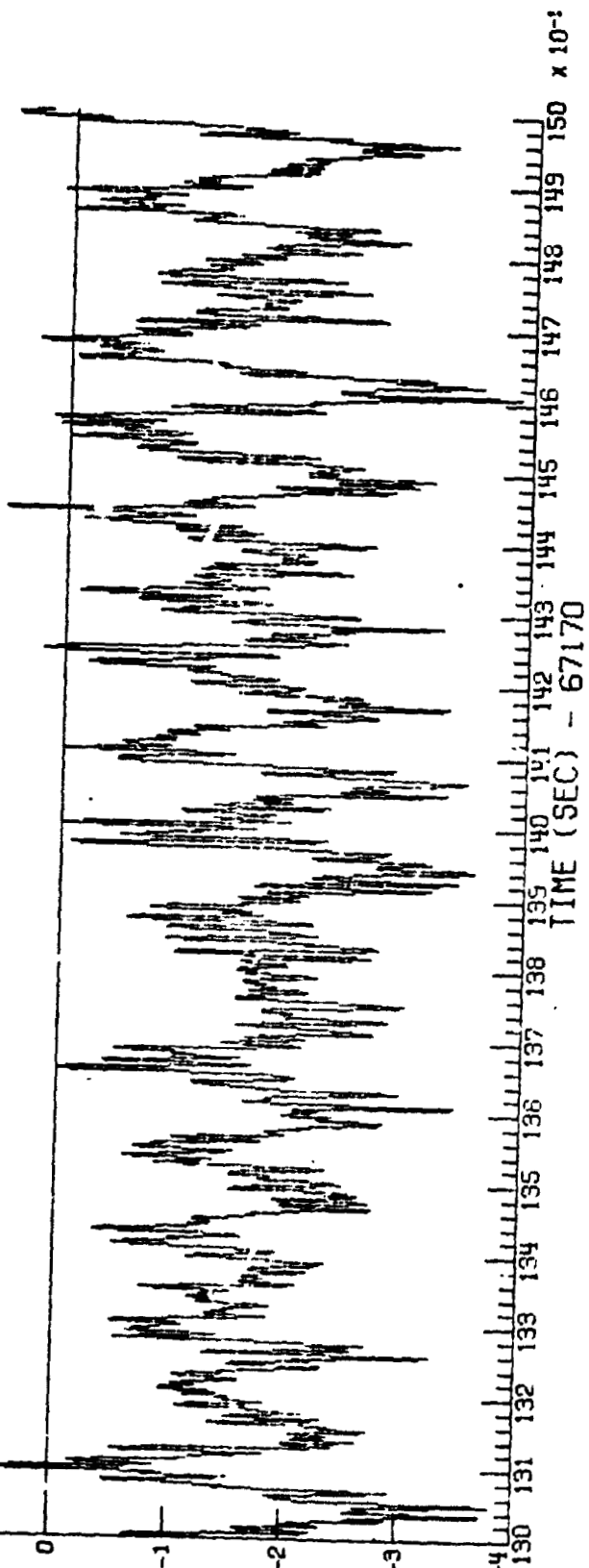
Figure 4.72b

# TIME HISTORY

$\times 10^{-3}$

148

(G) 2008



MAX = .052

MIN = -.388

VIKING 8 FLT (CIF)

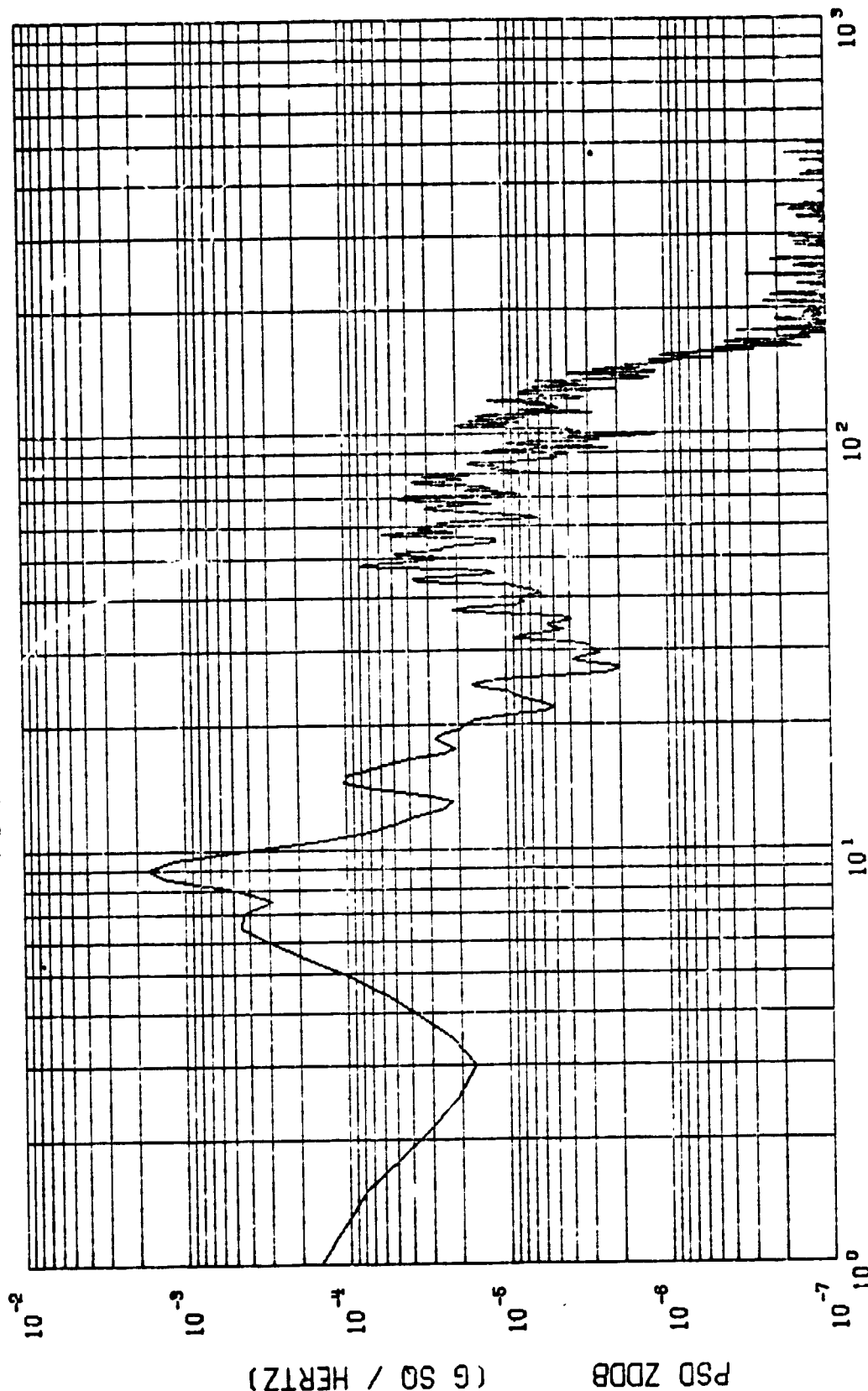
MAX 0 - 3

ZDD8

MSR-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75

Figure 4.73a

# POWER SPECTRAL DENSITY



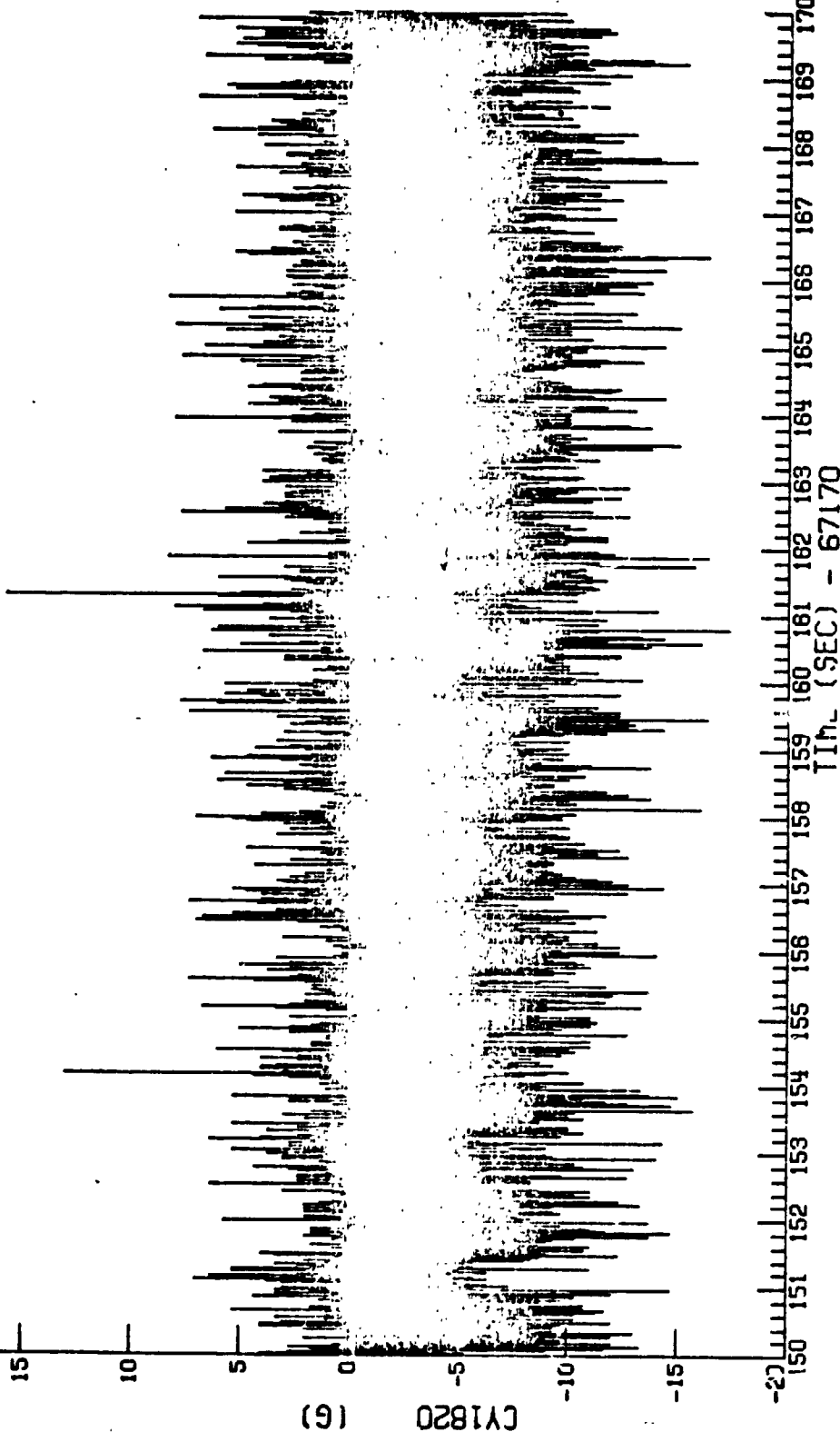
FREQUENCY (HERTZ)

$\Delta F = .500$       START = 67183.000 SEC      STOP = 67184.999 SEC  
 MEAN =  $-16359 \times 10^{-5}$        $\sigma^2 = 58362 \times 10^{-7}$        $\sigma = 76395 \times 10^{-5}$        $3\sigma = 22918 \times 10^{-5}$   
 VIKING B FLT (CIF)      MAX Q - 3      ZDOB

Figure 4.73b

# TIME HISTORY

150  
x 10<sup>-1</sup>



MAX = 1.567

MIN = -1.734

VIKING B FLT (CIF)

MAX Q - 3.5  
40% SPS

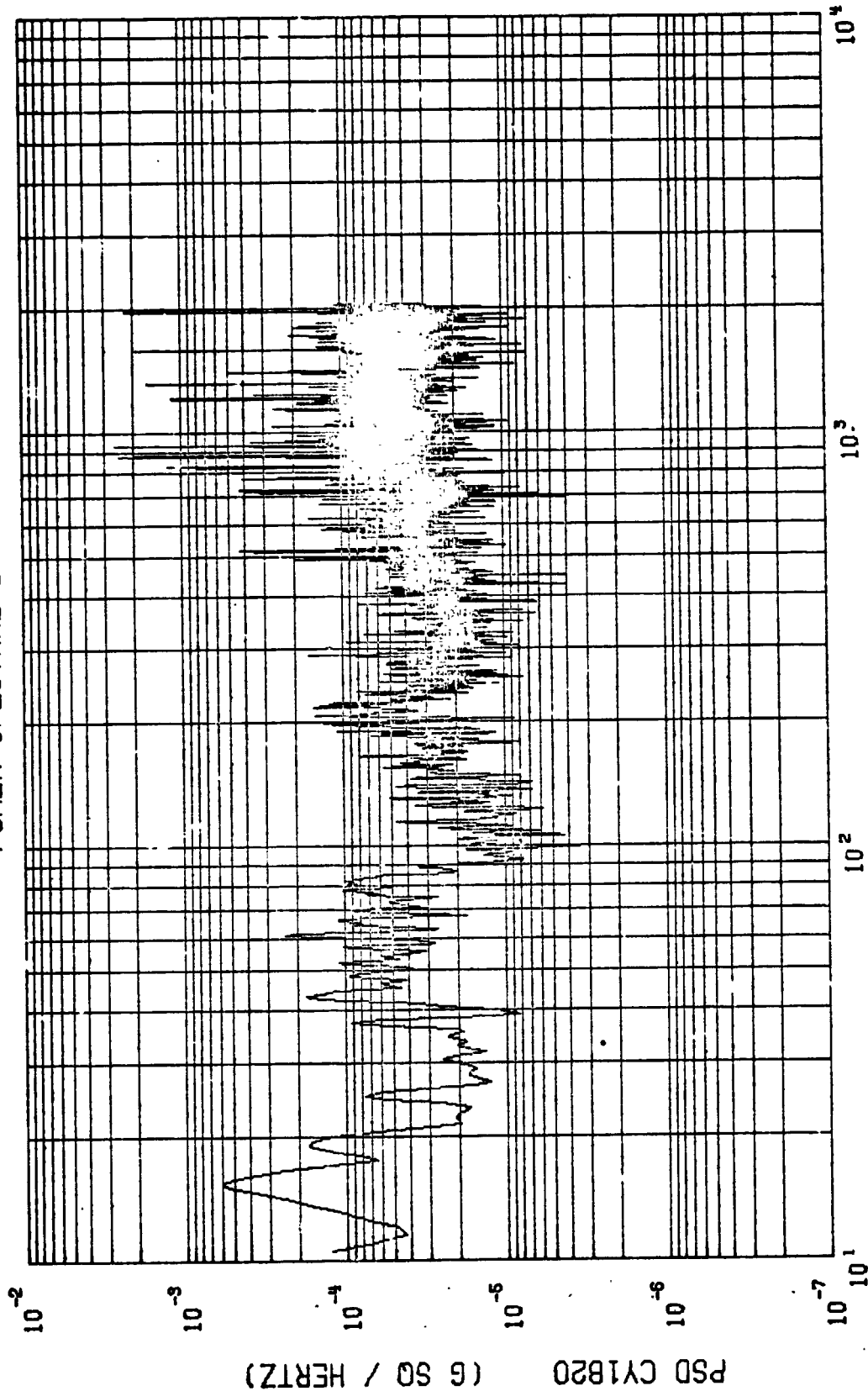
CY1820

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.74a

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OF POOR QUALITY

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .499$       START = 67185.000 SEC      STOP = 67186.999 SEC  
 MEAN =  $-33303 \times 10^{-5}$        $\sigma^2 = 12602 \times 10^{-5}$        $\sigma = 35499 \times 10^{-5}$        $3\sigma = 10649 \times 10^{-5}$

CY1820

MAX Q - 3.5

VIKING B FLT (CIF)

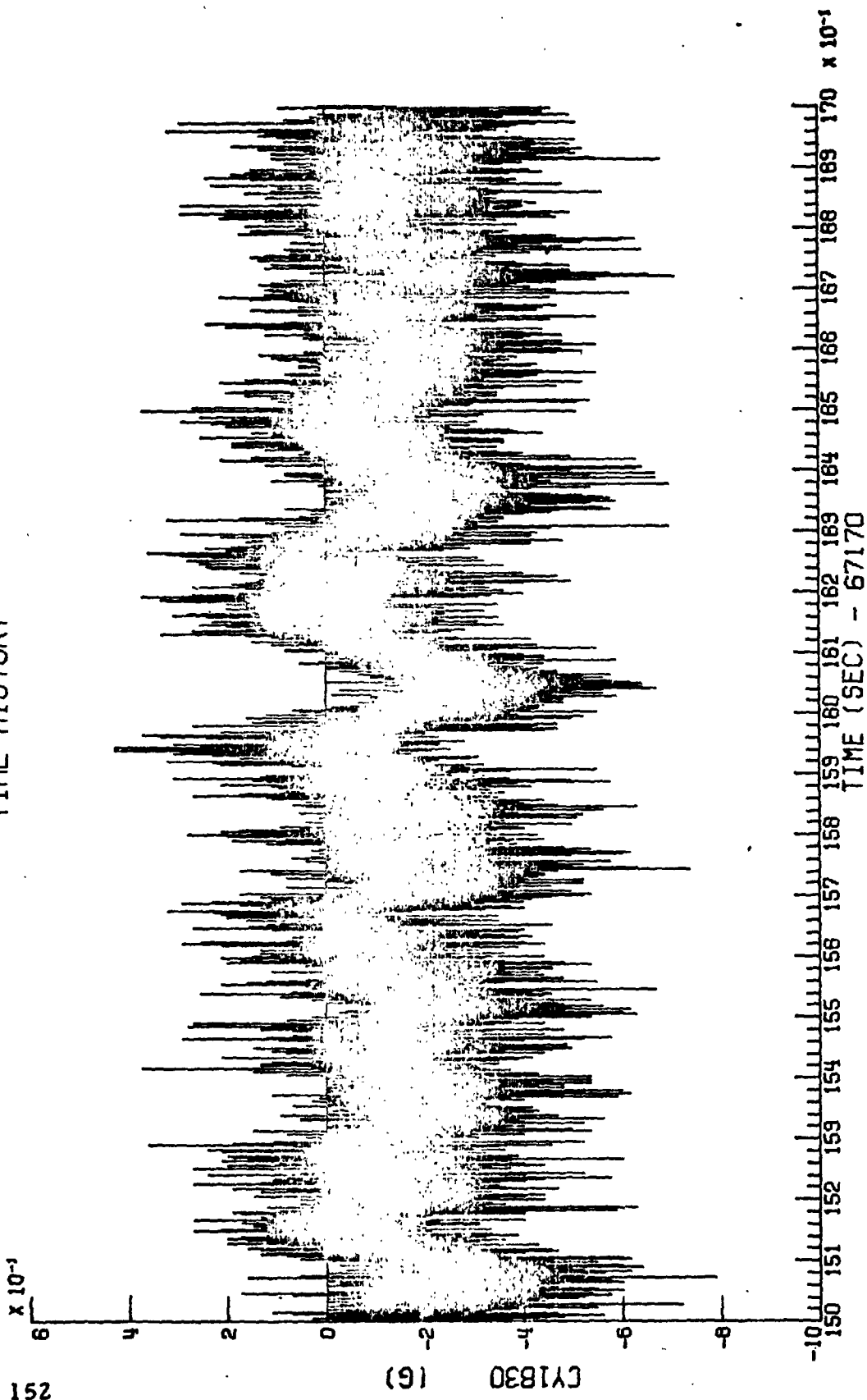
4096 SPS

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.74b



# TIME HISTORY



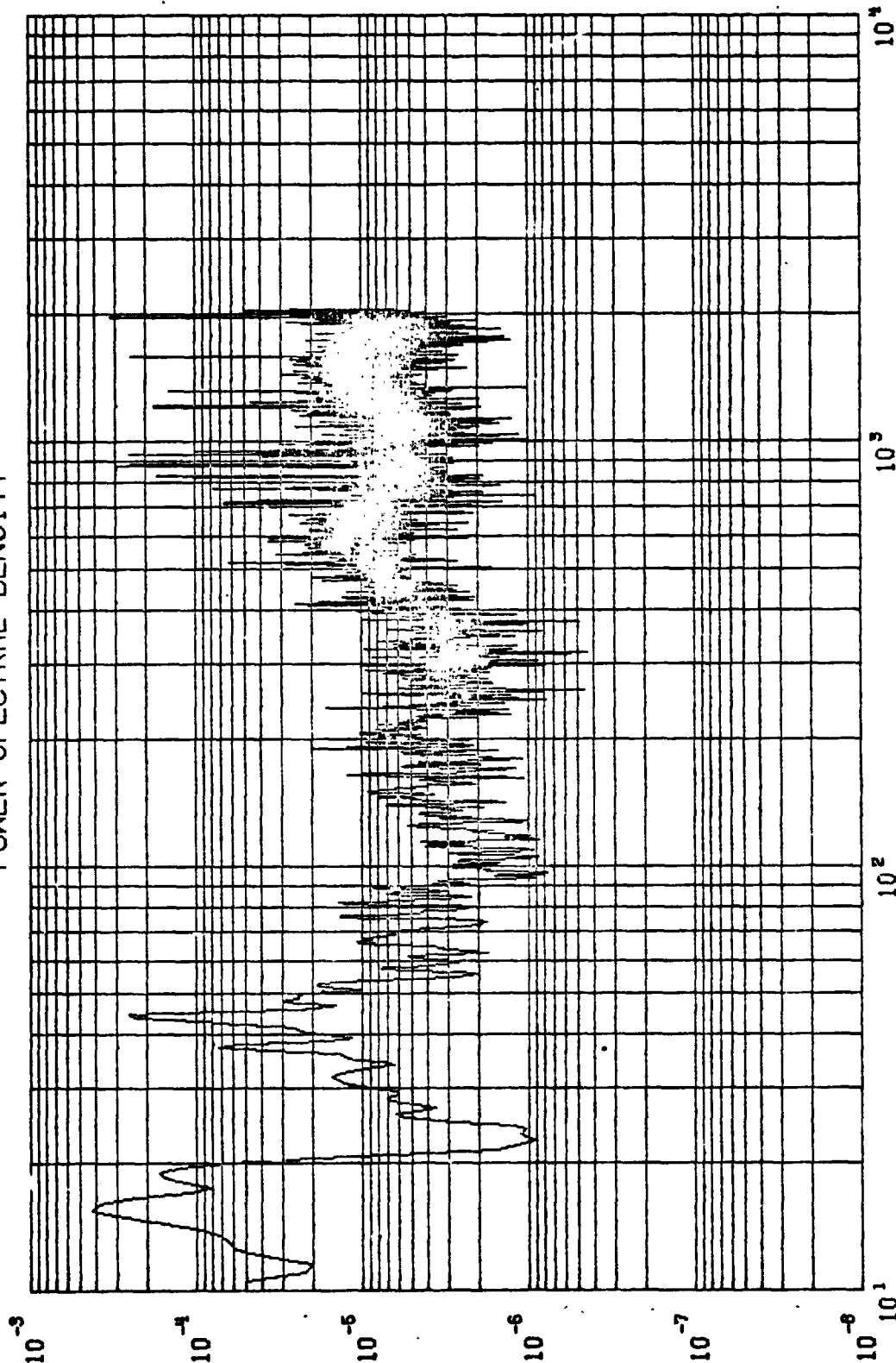
MAX = .427

MIN = -.787

VIKING B FLT (CIF),  
MAX 0 - 3.5  
4096 SPS  
CY1830  
Figure 4.75a

1

# POWER SPECTRAL DENSITY



PSD CY1830 (G SQ / HERTZ)

FREQUENCY (HERTZ)

$\Delta F = .499$   
 $MEAN = -14272 \times 10^{-5}$   
 $START = 67185.000 \text{ SEC}$   
 $STOP = 67186.999 \text{ SEC}$   
 $\sigma^2 = 27257 \times 10^{-5}$   
 $\sigma = 16509 \times 10^{-3}$   
 $3\sigma = 49529 \times 10^{-3}$

VIKING B FLT (CIF)

MAX Q - 3.5

CY1830

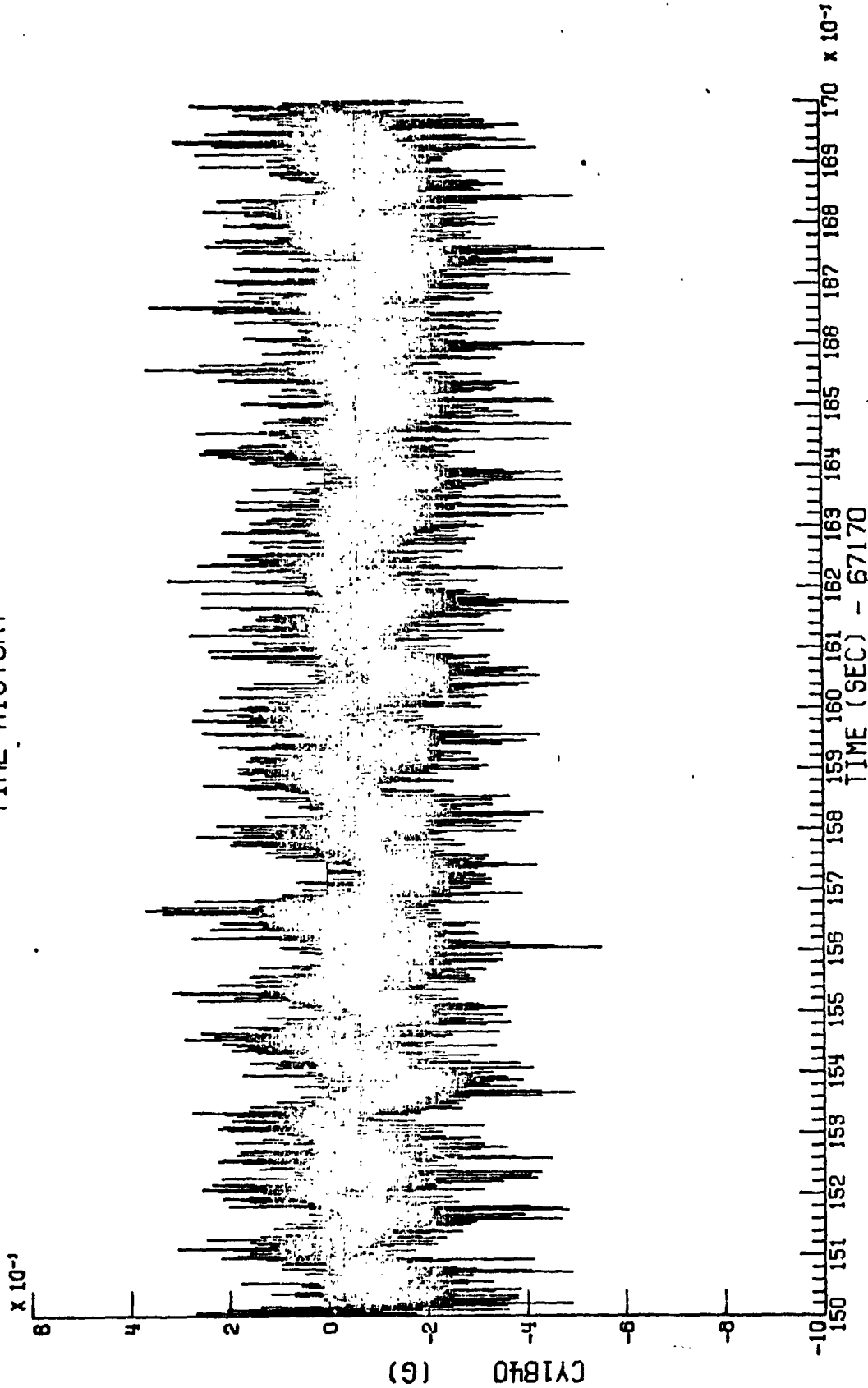
4096 SPS

Figure 4.75b

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# TIME HISTORY

154



MAX = .366

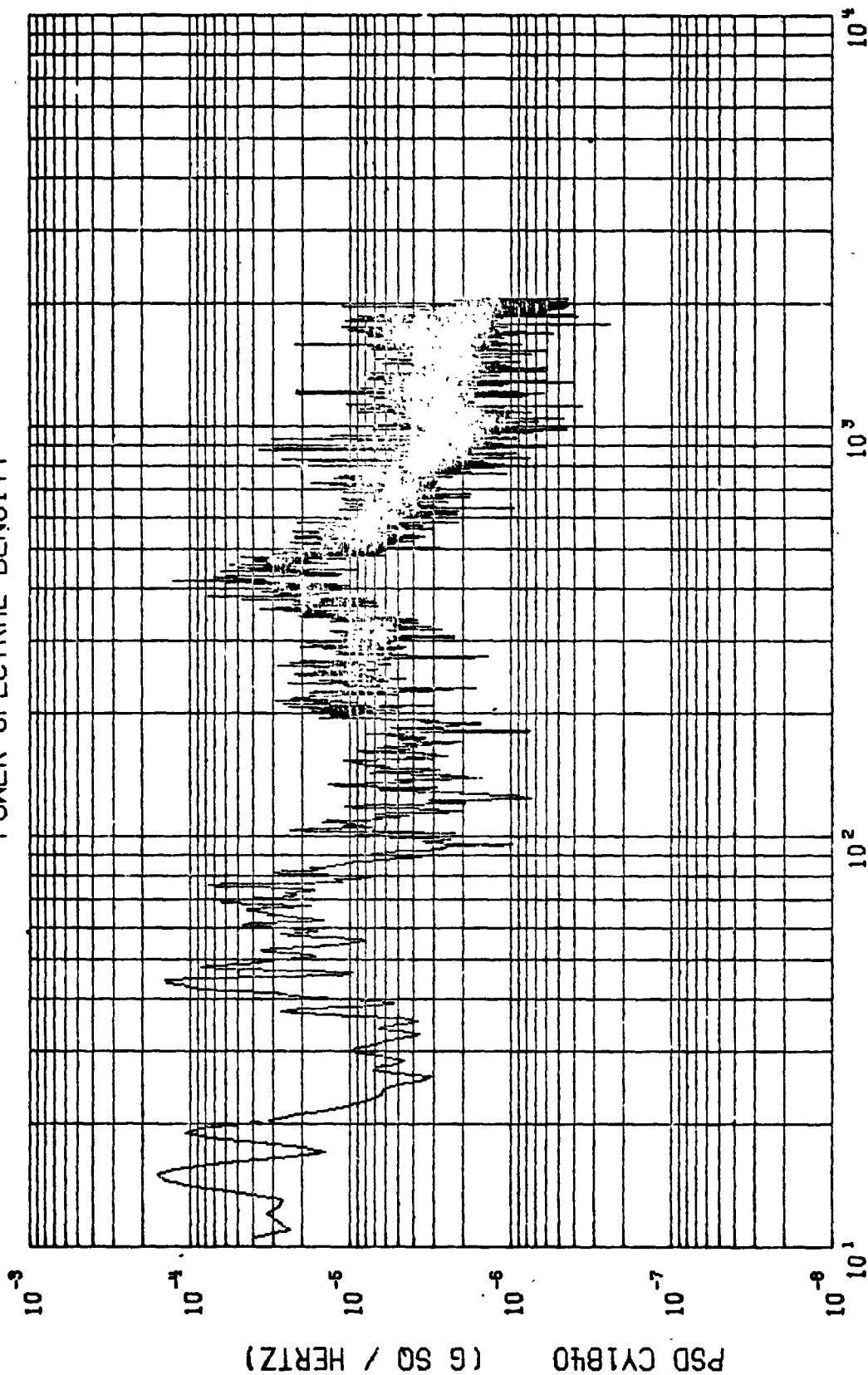
MIN = -.567

CY1840  
Figure 4.76a

MAX 0 - 3.5  
4096 sps

VIKING B FLT (CIF)  
W-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



$\Delta F = .499$       START = 67185.000 SEC      STOP = 67186.999 SEC  
 MEAN =  $-81273 \times 10^{-6}$        $\sigma^2 = 16089 \times 10^{-6}$        $\sigma = 12684 \times 10^{-3}$        $3\sigma = 38053 \times 10^{-3}$

CY1840

MAX Q - 3.5

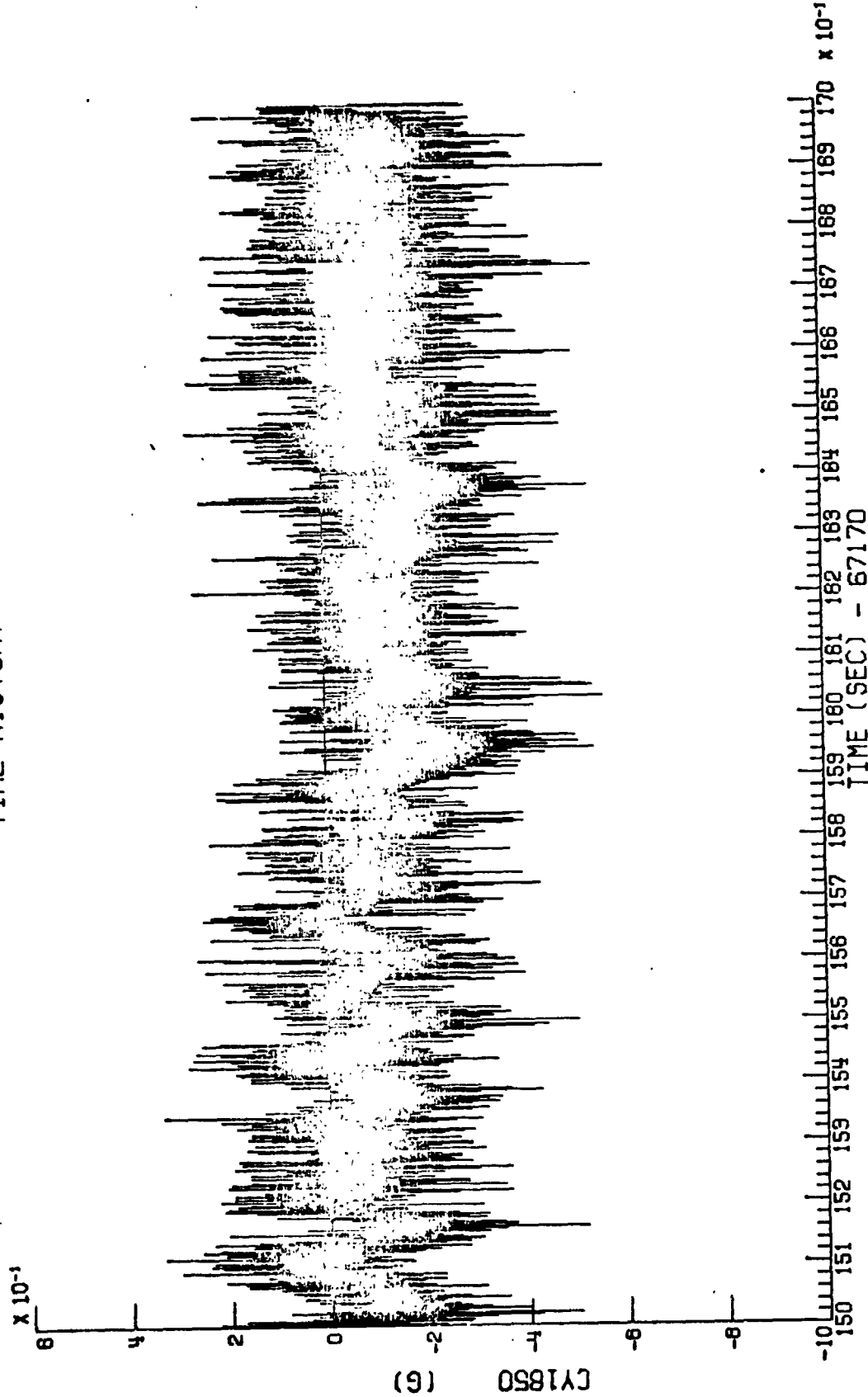
4096 SPS

VIKING B FLT (CIF)

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

Figure 4.76b

# TIME HISTORY



MAX = .333

MIN = -.572

VIKING 3 ALT (CIF)

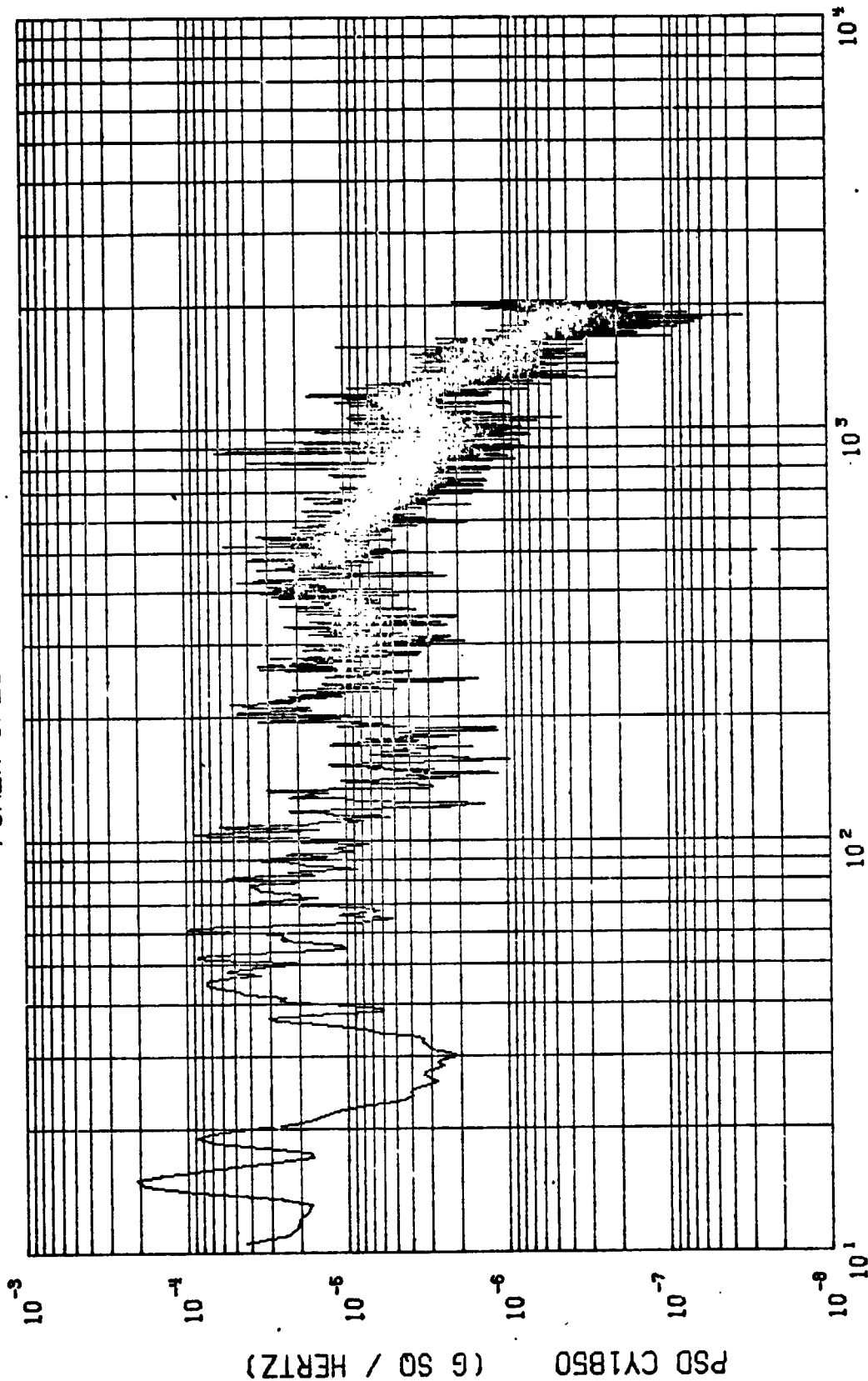
MAX Q - 3.5  
4096 SPS

CY1850

Figure 4.77a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/22/75

# POWER SPECTRAL DENSITY



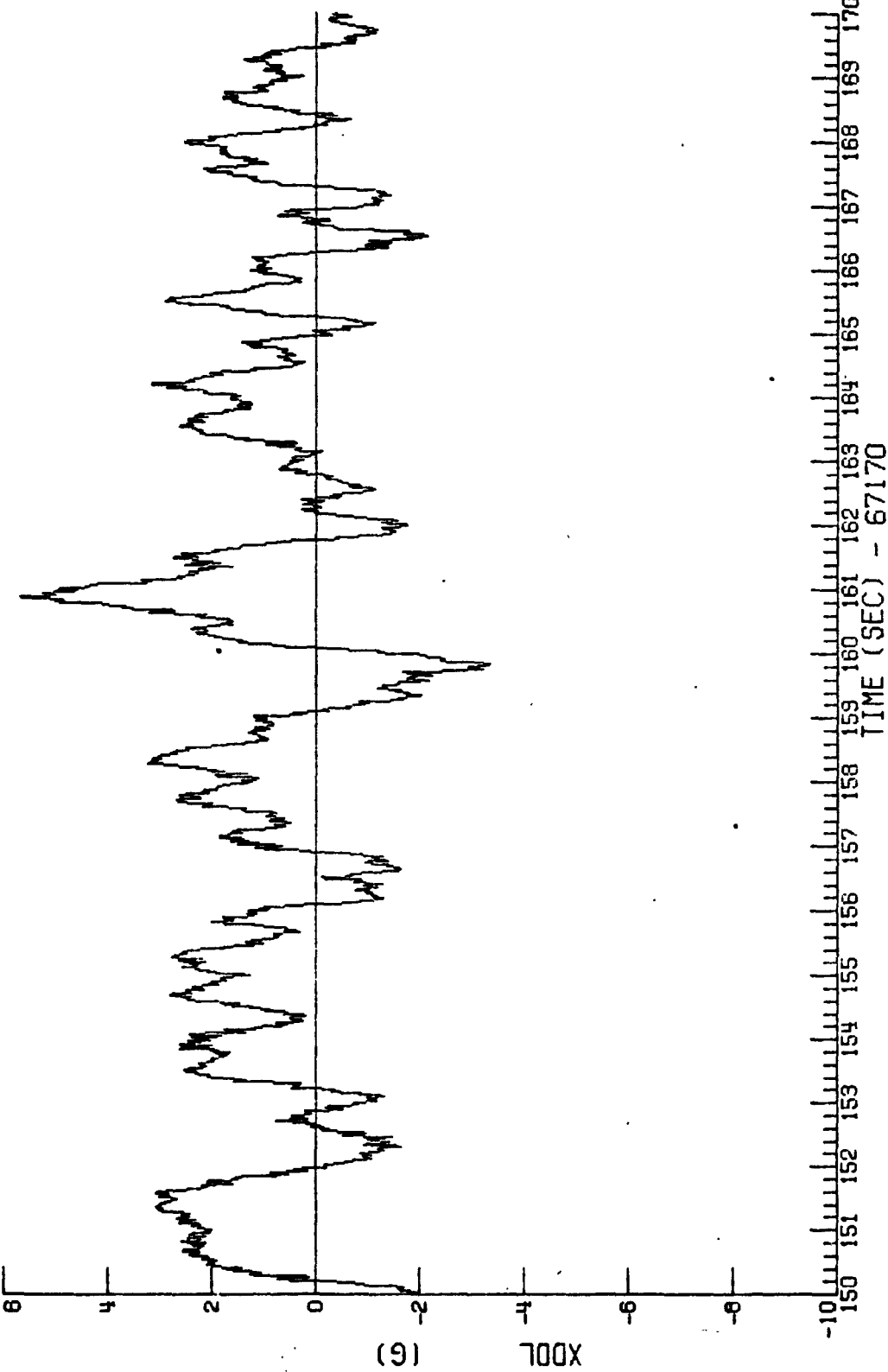
$\Delta F = .499$   
 $MEAN = -9847 \times 10^{-5}$      $\sigma^2 = 15506 \times 10^{-5}$      $\sigma = 12452 \times 10^{-3}$      $3\sigma = 37357 \times 10^{-3}$   
 $START = 67185.000 \text{ SEC}$      $STOP = 67186.999 \text{ SEC}$   
 VIKING B FLT (CIF)    MAX Q - 3.5    CY1850

Figure 4.77b

# TIME HISTORY

158

$\times 10^{-1}$



(9)

700X

MAX = .568

MIN = -.330

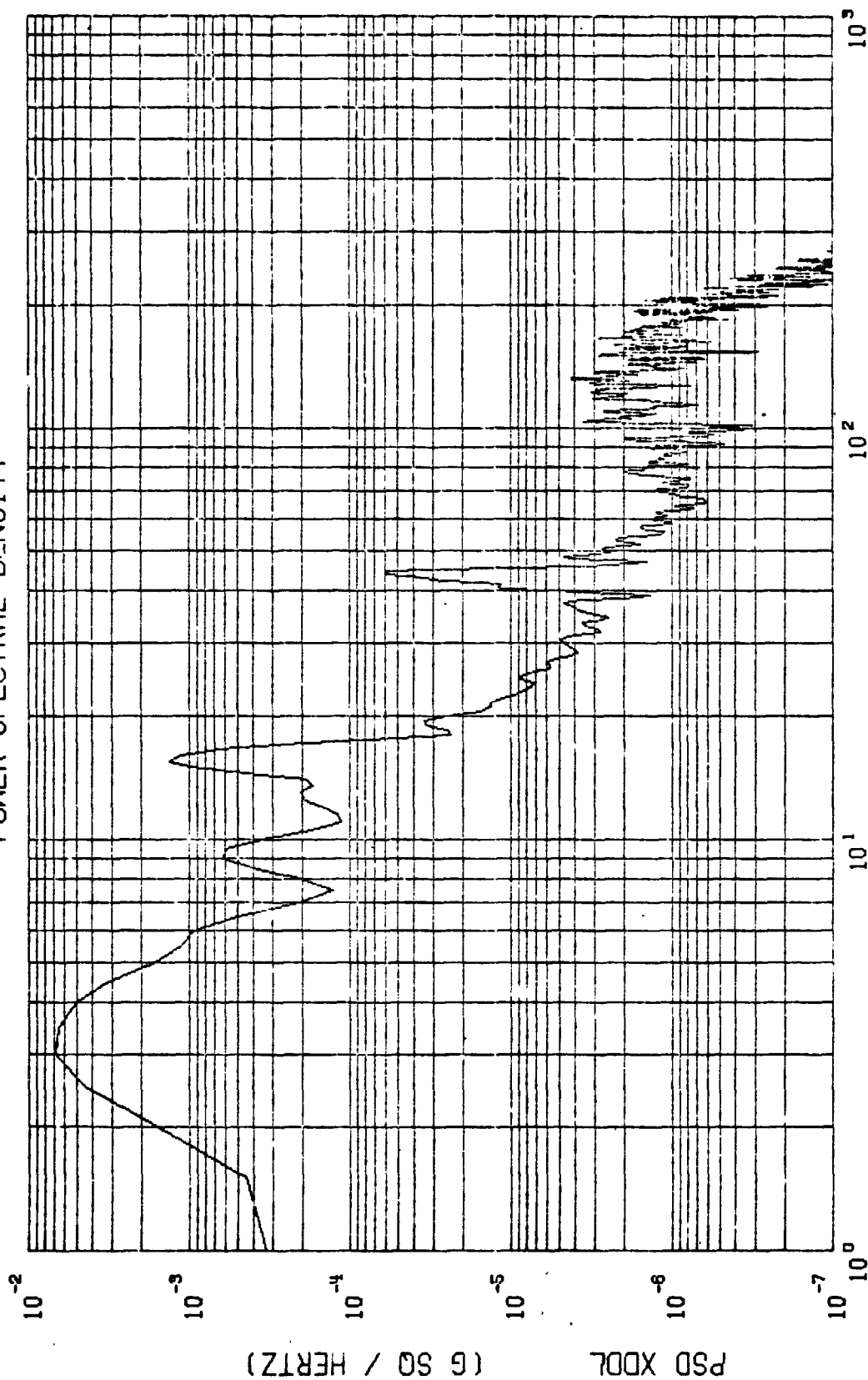
VIKING B FLT (CIF)

MAX Q - 3.5

XDDL

Figure 4.78a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$

START = 67185.000 SEC

STOP = 67186.999 SEC

MEAN =  $85259 \times 10^{-8}$

$\sigma^2 = 21523 \times 10^{-6}$

$\sigma = 1467 \times 10^{-4}$

$3\sigma = 44012 \times 10^{-5}$

VIKING B FLT (CIF)

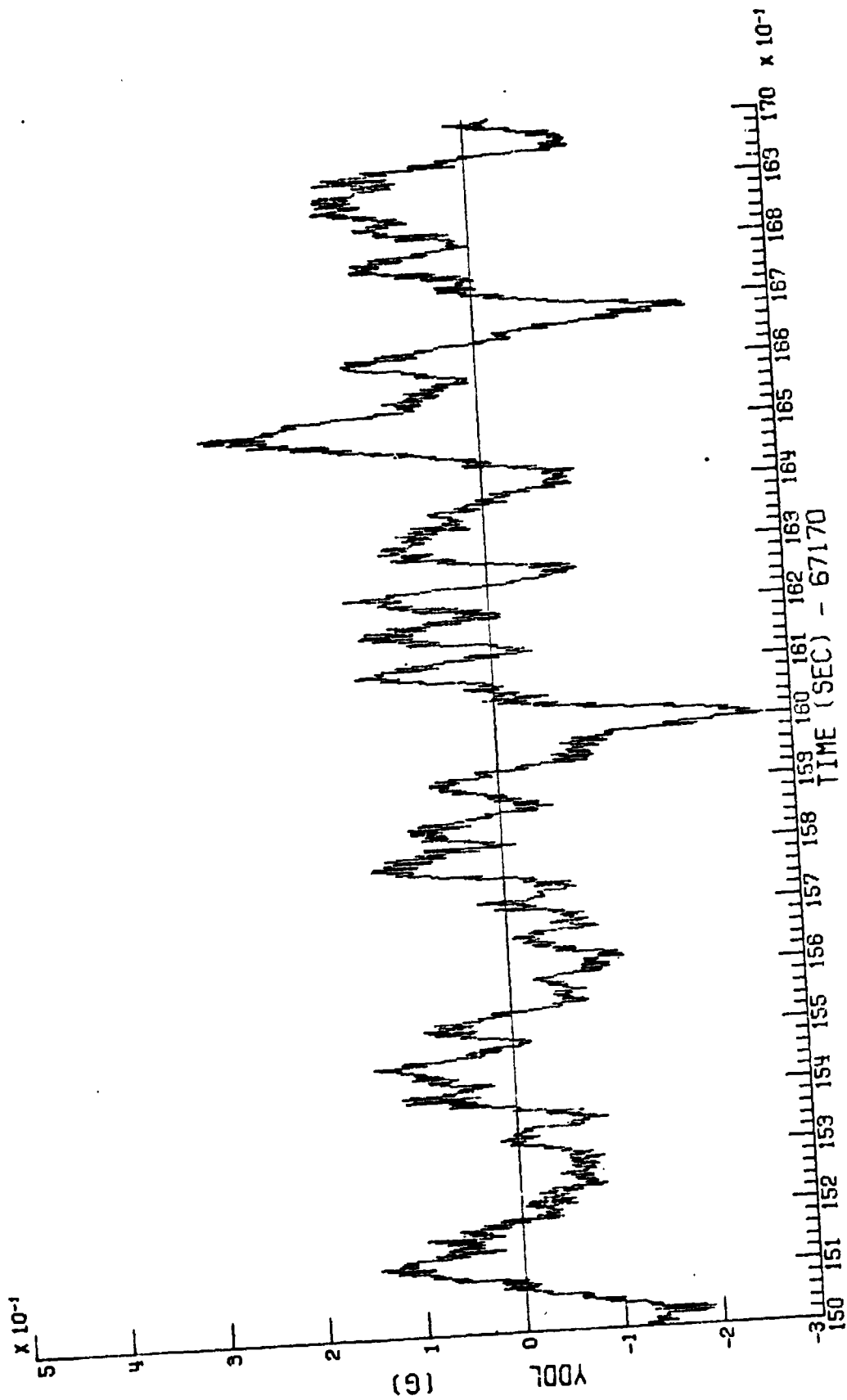
MAX 0 - 3.5

XDDL

Figure 4.78b



# TIME HISTORY



MIN = -.270

MAX = .284

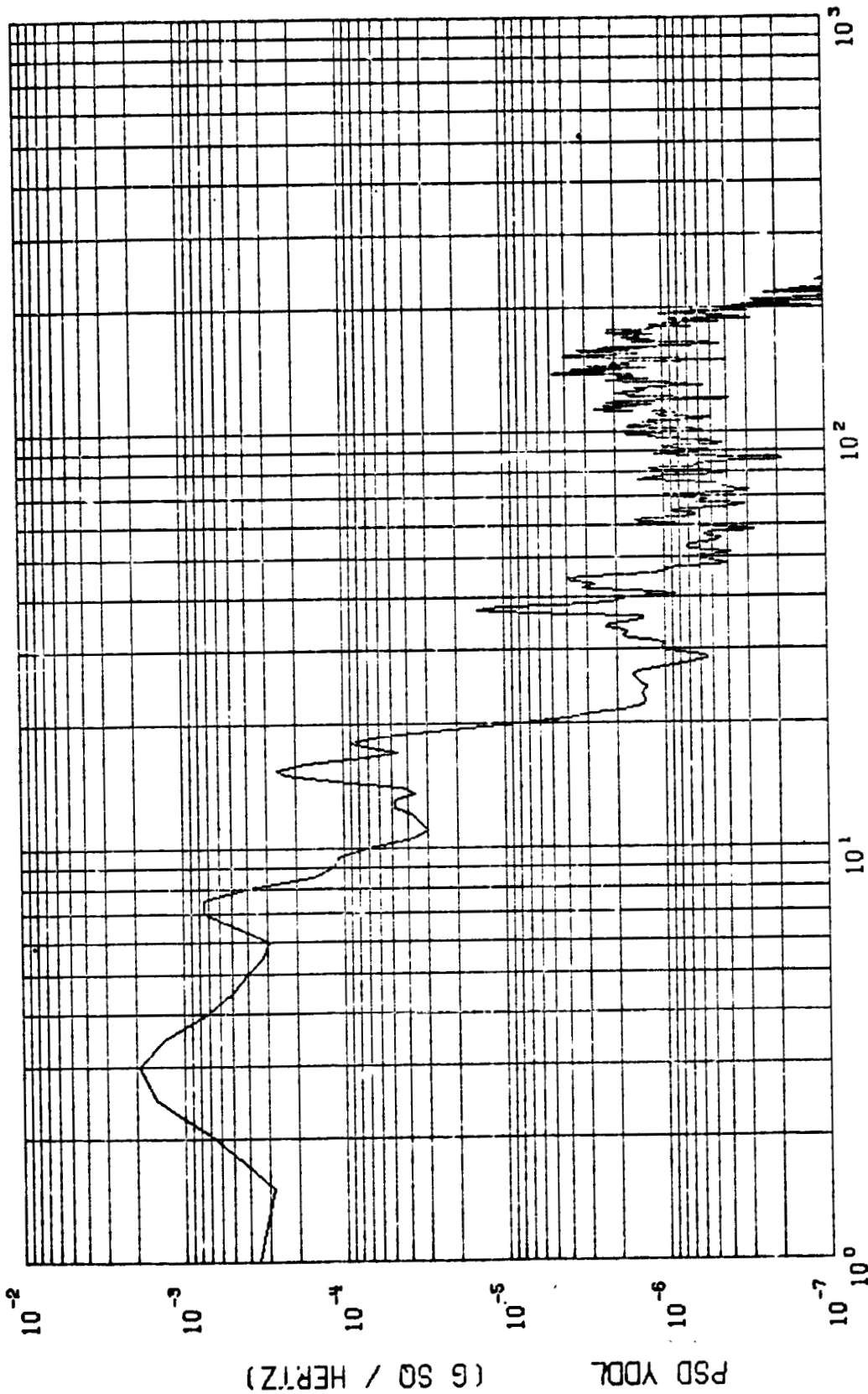
YDDL

MAX Q - 3.5

VIKING B FLT (CIF)

Figure 4.79a

# POWER SPECTRAL DENSITY



FREQUENCY (HERTZ)

$\Delta F = .500$  START = 67185.000 SEC STOP = 67186.999 SEC  
 MEAN =  $92034 \times 10^{-7}$   $\sigma^2 = 69577 \times 10^{-7}$   $\sigma = 83413 \times 10^{-5}$   $3\sigma = 25023 \times 10^{-5}$

VIKING B FLT (CIF) MAX 0 - 3.5 YDDL

Figure 4.79b

# TIME HISTORY

$\times 10^{-1}$

162

27

26

25

24

(9) 23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

2007

150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170  $\times 10^{-1}$

TIME (SEC) - 67170

MIN = 1.900

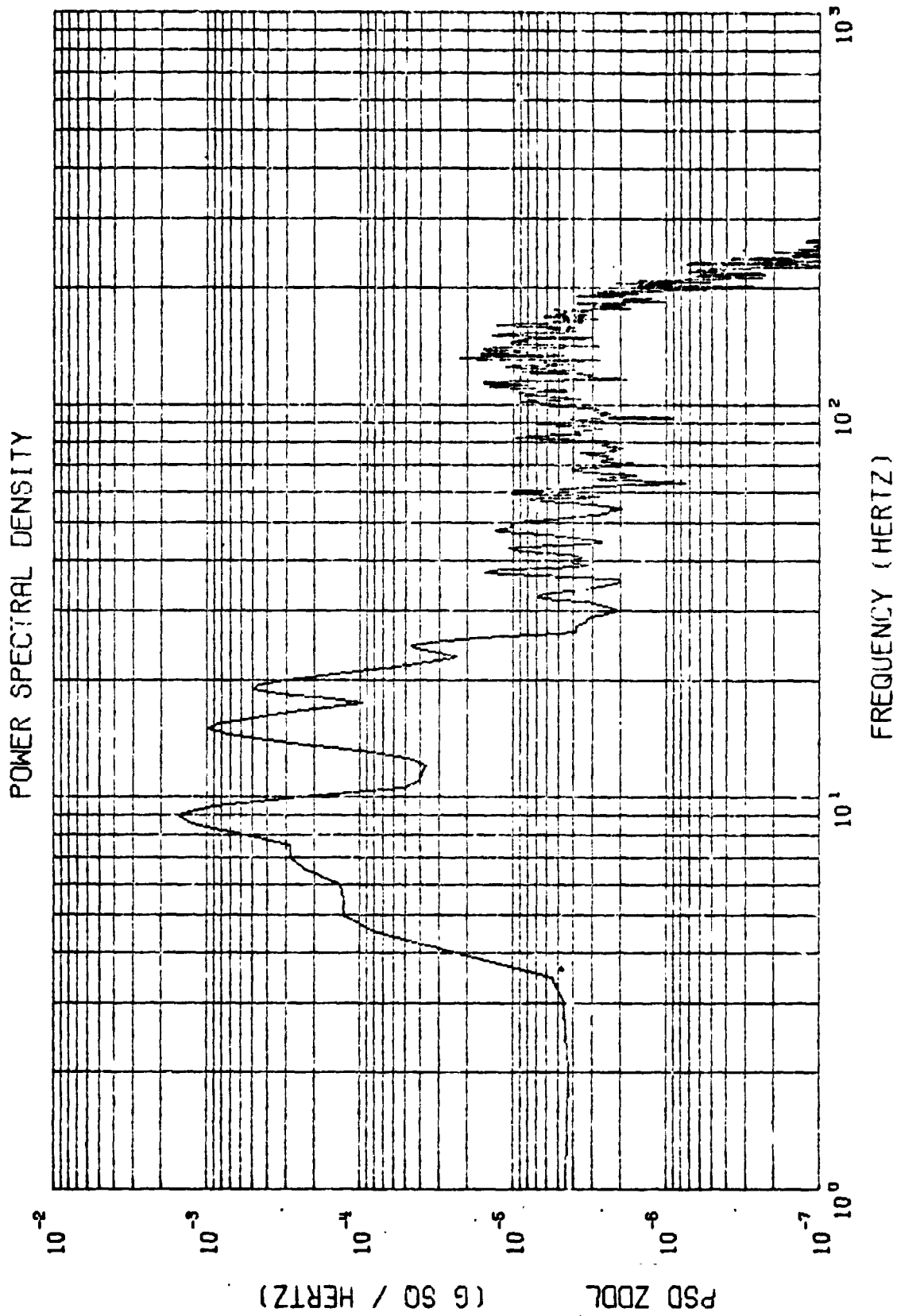
MAX = 2.372

ZDDL  
Figure 4.80a

MAX G - 3.5

VIKING B FLT (CIF)

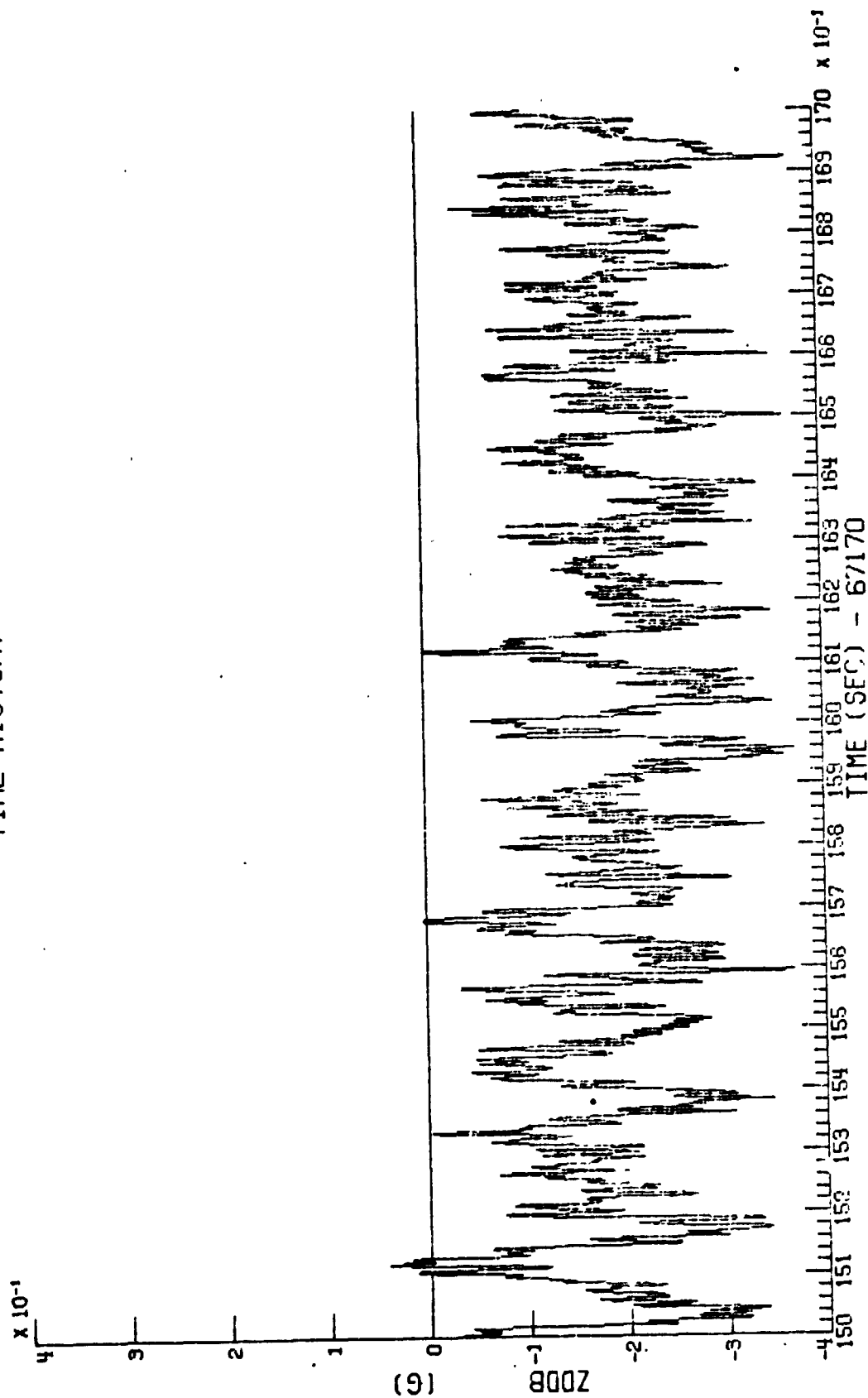
NASA-TRIMITY SIGNA ANALYSIS PROGRAM 09/22/75



$\Delta F = .500$       START = 67185.000 SEC      STOP = 67186.999 SEC  
 MEAN =  $21492 \times 10^{-4}$        $\sigma^2 = 72345 \times 10^{-7}$        $\sigma = 85056 \cdot 10^{-4}$        $3\sigma = 25516 \times 10^{-5}$

VIKING B FLT (CIF)      MAX Q - 3.5      ZDDL  
 Figure 4.80b

# TIME HISTORY



MAX = .041

MIN = -.371

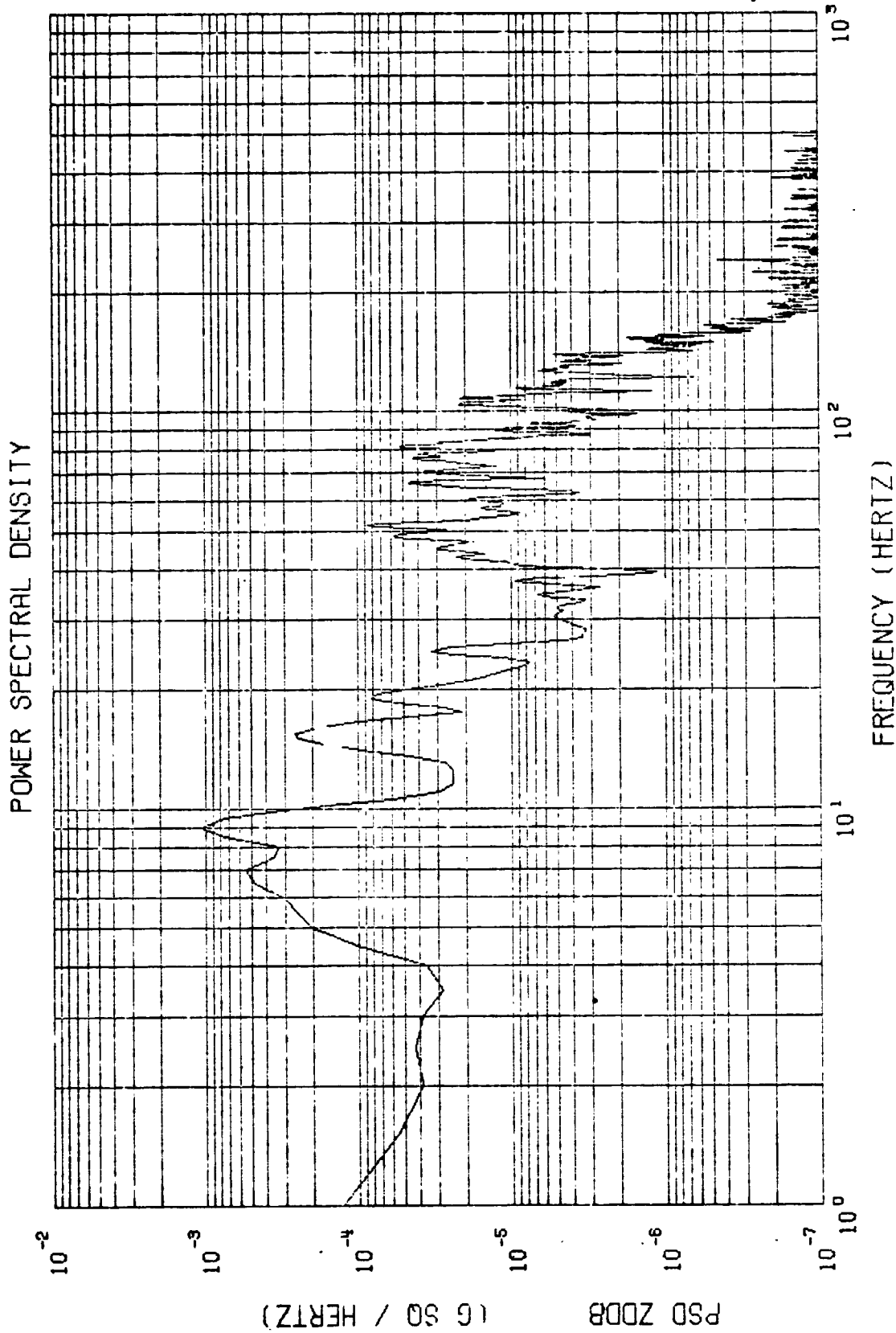
VIKING B FLT (CIF)

MAX Q - 3.5

ZDD8

Figure 4.81a

NASA-LANGLEY SIGNAL ANALYSIS PROGRAM 09/23/75



$\Delta F = .500$   
 $\text{MEAN} = -18855 \times 10^{-9}$   
 $\sigma^2 = 56374 \times 10^{-7}$

$\text{START} = 67185.000 \text{ SEC}$   
 $\sigma = 74414 \times 10^{-6}$

$\text{STOP} = 67186.999 \text{ SEC}$   
 $3\sigma = 22324 \times 10^{-6}$

VIKING 3 FLT (CIF)

MAX 0 - 3.5

Z008

Figure 4.81b